Welcome

You may have heard about the registry by reading about it in a computer magazine. It may have been mentioned by your IT staff at work. If so, it's usually prefaced by the words "don't touch the", or referred to as something that you really shouldn't worry your head over. This Focus Guide is aimed at anyone who has ever wondered why the registry is given such mythical status. It aims to demystify, illuminate and demonstrate that while it is a vital part of Windows XP, it really isn't such a big deal.



Anyone can learn to edit the registry in a safe and sensible manner. As long as you practice the cardinal rule of backing up before changing anything, you won't come to harm. You don't need to be familiar with every part of the registry, although such background knowledge will enable you to better understand what you're doing. It's certainly true that the registry is a huge and complex subject, too big for a book of this size to cover in its entirety, but you will find that this is an excellent introduction to the subject.

By the time you reach the end of this Guide we hope you'll have a much better grasp of what the registry is all about, so that you can begin editing it with confidence. You'll learn how to make the most of this fascinating database. You'll even find ways to impress your friends and family by making your PC behave a little smarter than anybody else's! Don't forget to look out for new and interesting ways to make the most of your PC in our sister title, Windows XP: The Official Magazine. Have fun!

www.windowsxpmagazine.co.uk

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Chapter 1

What's The Registry

Find out what the registry does and why you must always treat it with a modicum of respect

Microsoft Windows xp

Yes you can...

- Use registry terminology
- Understand the history of the registry
- Learn the main data types used

Project time...

25 mins

More Info

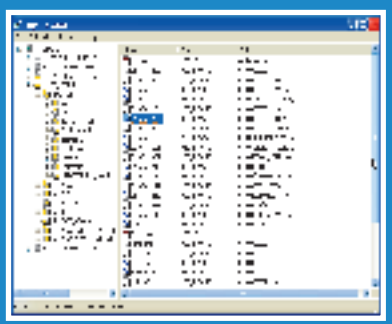


www.microsoft.com/windowsxp

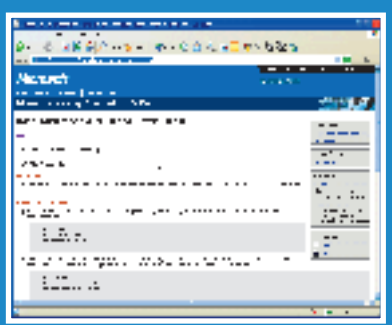
The registry is a collection of all the settings and configurations of Microsoft Windows XP and the software and hardware you have installed on your PC. It's arranged in a hierarchical structure to make it easier to locate items. The structure of the registry is very similar to the structure of your hard drive and the folders and files that are stored upon it. In fact, when you use the Registry Editor, things look very much like Windows Explorer. However, it's important to remember that this is a similarity and not an equivalence: the registry itself is a file, not a hard drive with directories and sub-directories.

Back It Up

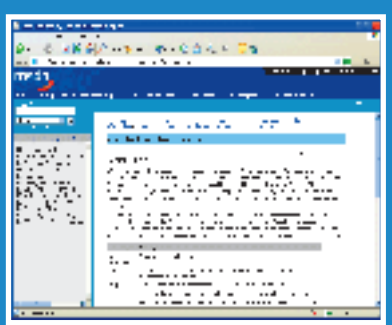
Even talking of the registry as a file can be a little misleading. It is a hierarchical database of all your Windows settings and as such is possibly the most important file on your system. Delete it at your peril; edit it incorrectly and you'll be in deep trouble – without the registry, Windows XP wouldn't function, so you must make sure that you back it up before you make any changes.



Page 13 Find out the main levels of the registry hierarchy



Page14 Discover why text files became unsuitable for configuration information



Page 15 Learn the names and functions of the registry hives

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Microsoft Windows xp

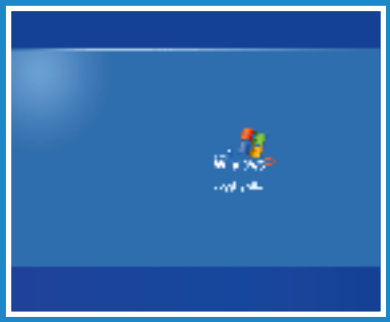
What's The Registry?

In this chapter you'll find out how the registry is structured. You'll learn the difference between hives, keys and subkeys. You'll find out how value entries differ from the data values themselves. You'll also learn the functions of the main parts of the registry and you'll begin to understand the different types of data that the registry can hold.

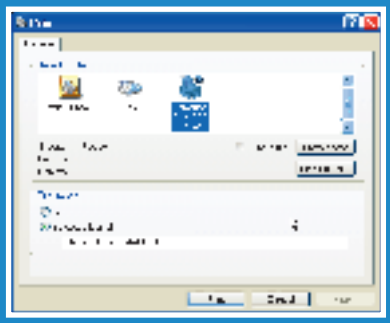
Editing the Registry

We'll explain what the registry is for in the first place. We'll also offer advice on how to avoid disaster when contemplating editing the registry. Backing it up is a piece of advice often given in the computing world, yet it is probably the least heeded. Often you get away without a backup, usually more by luck than judgement. However, you can't take that sort of cavalier attitude to the registry. That will only lead to frustration, high blood pressure and tears before bedtime. There are ways to avoid trouble while actually making changes, but they will not negate the need to back the registry up.

If you distrust the electronic medium, you'll probably keep important documents on paper. If so, you may be pleased to learn that you can print the registry out, but keep a few reams of paper spare if you decide to do so.



Page 16 When do the changes you've made come into effect?



Page 18 Print the registry out, if you have enough ink and paper



Page 19 Avoid messy problems by using a third-party registry editing program

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What is the Registry?

It's the most important file on your PC, but there's no need to fear it



Every time you add hardware or install software, you make changes to the registry. You often make changes when you modify your software settings, too. The registry is constantly changing, which is why it's a good idea to learn how to manage it.

The Windows XP Registry can send even the most advanced PC users into a cold sweat. It seems shrouded in mystery, rather like a computing Holy Grail.

Many people talk about the registry when they have no clear idea of what it is. In fact it's no more or less than a file, just like any other file on your system. However, the contents of this file are some of your most critical settings and without them Windows XP would be lost.

The registry is a hierarchical database of Windows XP information and that of many of your applications. The hierarchy makes sure that these pieces of data can be saved in their correct places.

Before the registry was introduced to Windows, this sort of information was saved in a collection of text files which became difficult to manage. The registry ensures that all this information is kept in one place, which makes it easier to manage, as long as it doesn't get too big.

We'll show you several ways that you can slim down the registry in Chapter 6 of this Focus Guide.

Managing the Registry

It's easier than you might think

While the registry is undoubtedly a critical core component of Windows XP, it isn't difficult to handle. You can edit parts of the registry just as easily as you can copy, move or delete files using Windows Explorer. The reason people get nervous when contemplating editing the registry is because you can damage Windows XP if you remove the wrong thing. If you have a recent backup up your sleeve, you'll be able to undo any wrong moves. You'll find out how to do this in Chapter 2.



Visit the Windows XP home page for advice on your operating system.

www.microsoft.com/windowsxp/default.asp

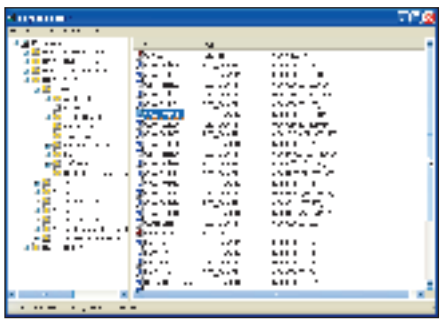
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Key Terms

It's important to understand registry terms before you work with them

There are several terms used when describing the registry. Unfortunately, different people use different terms and some people use the same terms but apply them differently. The following is a summary of the terms we'll use in this book.

The registry has five main sections called hives. Within each hive are numerous keys. Within a key there may be subkeys, although we may simply call these keys if we're not referring to the parent key. There may be several value entries, each of which has a data type and a data value. It's easier to appreciate how these terms relate to one another once you start exploring the registry.



The Registry Editor, showing examples of hives, keys, subkeys and value entries.



Don't be tempted to try out any registry editing until you've learned how to back up and restore the registry in Chapter 2. You can easily render your PC useless by deleting or altering the wrong value.

- **A hive** is the term used for one of the main sections of the registry. In a tree structure, it is a first branch from the trunk. It is like a major directory on your hard drive.
- **A key** is the term used for a sub-division of a hive. You can consider it to be like a folder within a main directory on your hard drive, or, if you will, like a secondary branch off a primary branch in a tree structure.
- **A subkey** is the term used for a sub-division of a key. It is similar to a smaller sub-folder on your hard disk and can be likened to twig in a tree structure.
- **A value** entry is similar to a file in your hard drive structure, or a leaf on a tree. It will have a name, a data type and a value.
- **The data** value is the setting of a value entry, which is similar to the contents of a file on your hard drive.



Follow the link to visit the Registry Guide for Windows. This includes a lot of advice, tips and tricks to help you learn about the registry and how to edit it. There are a number of cool tweaks for you to try out.

www.winguides.com/registry

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Some History

It's easier to appreciate how the registry works if you know about its background



The hierarchical nature of the registry makes it easier for Windows XP to locate items. You can use it to your advantage when searching for items, if you remember that you can go back up one or more levels if you get lost.

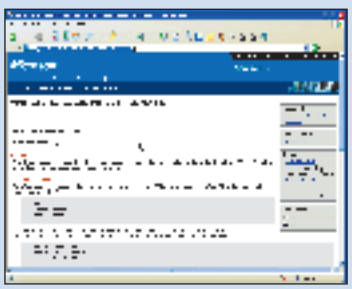
The registry has been a part of Microsoft Windows since Windows 95 was released. It has been refined and enhanced with each release of Windows since then. Before Windows 95, the sort of data that is now stored in the registry was stored in text files with the files extension .ini. These included win.ini and system.ini. These files still exist in Windows XP, but they contain far less data. In the pre-registry days, these files ballooned in size as programs added information to them. Size limitations soon made text files impractical for this use. The registry provided a hierarchical structure, which made handling such data much easier because there's no need to scan through a full text file to find the desired setting.

However, having all your eggs in one basket does court danger, which is why it is vital that you ensure that you have an up-to-date backup of your registry. In Windows XP there isn't a size limit for the registry imposed, although an outsized registry will hit performance, so there is a need to curb the bloat.

The Return of Text Files?

How to shift application data to a different home

While most applications store their configuration information in the registry, some don't. Microsoft is now encouraging program writers to use text files with the .ini file extension to hold the application data. This means that each program would have its own configuration file which would keep the size of the registry down. It would also mean that not all configuration information would stay in the registry, which takes care of the 'all your eggs in one basket' problem.



Some third-party apps use their own .ini files to save space in the registry.

http://support.microsoft.com/default.aspx?scid=kb;en-us;74608

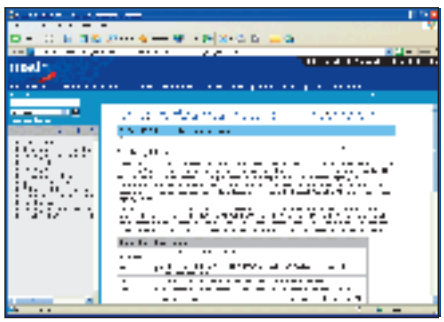
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Hive Talking

Hives in the registry are major divisional units. There's not a bee in sight…

We've defined hives as the initial divisions in the registry, though Microsoft defines a hive as 'a group of keys, subkeys and values in the registry that has a set of supporting files containing backups of its data', which suggests that some keys might qualify as hives. However, for the sake of clarity, we'll stick with our original definition.

Each hive has a name starting with HKEY (Hive key). The H also stands for handle, because certain programs use this when they interface with the registry. You can think of hives as if they were directories on a hard disk as you can browse and manage them in a similar way.



A hive is a group of keys, subkeys and values associated with backup files.

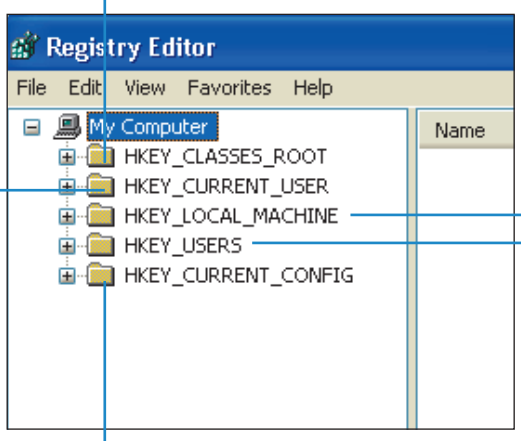


The hives have rather long names, which is why they are often referred to by their initials. For example, HKEY_LOCAL_MACHINE is often called HKLM; HKEY_USERS is just called HKU. So can you guess what HKCR, HKCU and HKCC stand for?

Say Hello to the Hives

HKEY_CLASSES_ROOT. This provides information about file associations and backwards compatibility with previous versions of Windows.

HKEY_CURRENT_USER. This hive manages information about the current user, such as the desktop appearance and resources available to that user.



HKEY_LOCAL_MACHINE. This hive is concerned with this particular computer. It's probably the hive you'll work with most.

HKEY_USERS. This maintains information on each user account and its associated profile.

HKEY_CURRENT_CONFIG. This contains data that is associated with the current system configuration.

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What is it for?

It's all very well knowing what bits of it are called but what does the registry do?



As soon as you begin to load Windows XP, the registry comes into play. Initially, the keys HKEY_LOCAL_MACHINE /Hardware and HKEY_LOCAL_MACHINE /System are loaded, but other parts of the registry come into play once a user logs on.

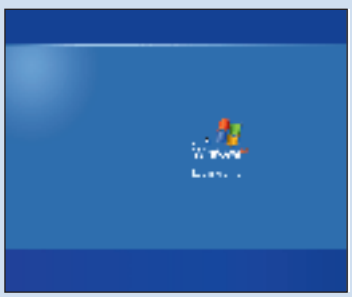
The registry is in constant use, from the early stages of the boot process right up until you come to shutting down Windows XP. If your registry is missing or corrupted, you won't be able to use Windows XP – it's as simple as that. There are ways to resurrect such a system, which we'll go into in the next chapter, but it's worth making it clear that this database is very important indeed.

Registry information is generated when you install Windows XP and when you install any software and hardware. Whenever you boot your computer, you are making changes to the registry. You also add data to the registry when you use any applications or when you change any system settings. Think of it like a list that Windows XP writes as you do things so it can remember where everything is and what state it was in when you last used it. Every time you change something, you make an alteration to the list. When you consider this it will not come as a surprise that the list gets longer and longer as time goes on.

Changes and their Effects

When do registry alterations come into effect?

After you make a change in the registry, when the edit takes effect will depend on the type of data you have changed. Application-related data will take effect when you next open the application. User-related data will change when the user in question logs back on again. Some system data might come into effect right away, but most will need you to restart Windows before you'll notice the difference. In short: if it's to do with a program, restart it; if it's to do with a user, log them off and back on again; if it's to do with Windows itself, restart your PC to see the results of your editing.



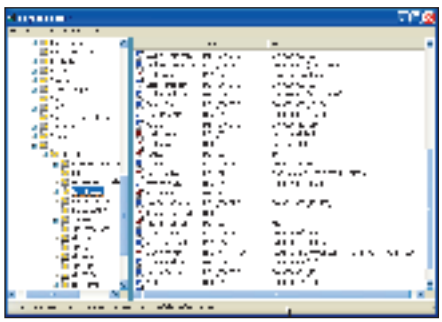
You may need to restart Windows before your registry editing comes into effect.

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Value Entries

The registry holds a range of different data types. Here are the main ones…

The value entry is the lowest unit in the hierarchy of the registry. However, this doesn't make it unimportant: it's the value entry that does the real work of the registry; this is where each bit of data is held. The data can take one of many different forms, although there are five data types that are far more common than all the others. The data type determines whether the value entry holds numbers or a string of letters. If the former is the case, the number could be a decimal value, a hexadecimal value or a binary value. The latter string could be fixed in length or it could be expandable, depending on the way it is used by Windows XP.



Numerous value entries exist, but there are limited different types of data.



You don't have to struggle with hexadecimal values when you modify a DWORD value. Just change the setting to decimal and you can enter the kind of number we're all comfortable with. Change the setting back to hexadecimal for an instant conversion.

- **A String** value contains a single string of characters and is normally used for items such as file paths or filenames. It's also referred to as REG_SZ.
- **A Binary** value holds binary data. It's the most basic data type in the registry, since it's just ones and zeros, but it isn't easy to use for precisely the same reason. It's also called REG_BINARY.
- **A DWORD** value consists of a 32-bit number, which is expressed in decimal or hexadecimal. Depending on how mathematically adept you are, you can modify it in each system. It is also known as REG_DWORD.
- **A Multi-String** value contains one or more strings. It is also referred to as REG_MULTI_SZ
- **An Expandable string** value is one without a set length. It is terminated by a character with a value of zero. It can contain a number of variables and is also known as REG_EXPAND_SZ.



Need a quick reminder of the main data types? Open the Registry Editor and right-click anywhere in the left-hand window. Hover the mouse pointer over the word New and you'll see a drop-down list of the data types.

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Printing the Registry

Yes, believe it or not, you can print out the registry. Keep lots of paper handy



Use Print to File if you need to send the print-out to someone who is a long way away. You can send the file by email and they can print it out on their side, saving the time taken to send paper via conventional mail.

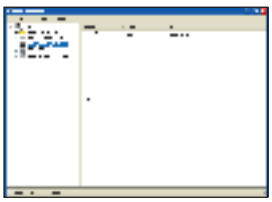
There are times when a hard copy of your data will come in handy. After all, it's much harder to erase a print-out than it is to delete files from a hard drive, as you may already know to your cost. This is why it is possible to print out the registry.

In most circumstances you're unlikely to want to print the whole lot out; not only would this be hugely wasteful of ink and paper, but you'd be pushed to find a use for all the pages once they've spewed out of your printer.

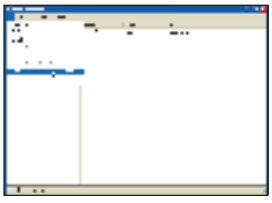
There are times, however, when a print-out of a key or subkey might be handy. If, for example, you find that you need to make the same changes to the registry on a different PC as you've made on this one, you could create a record by printing it out. A print-out would also be useful if you needed to instruct someone else on a registry edit that is more complex than one or two alterations. Handing the printed version over with the instruction to 'make it look like this' is quick and easy and can avoid lengthy explanations.



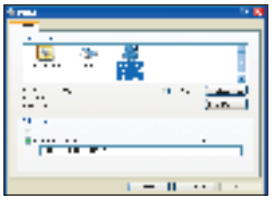
If you're still considering printing out the whole registry, bear in mind that the average registry takes up hundreds of pages. A mature registry can be many times bigger. Stick to printing individual keys.



1 Open the Registry Editor by choosing Start > Run and typing regedit into the Open bar. Click OK. Browse to the part of the registry that you want a printed copy of. This may be a key a subkey, an entire hive or the whole registry.



2 In the latter case, just highlight My Computer within Regedit. With the section of the registry that you want to print highlighted, click File > Print. Alternatively, use the keyboard shortcut [Ctrl]+[P], which opens the Print dialogue.



3 Select the printer you want to use and also confirm if you want to print the whole registry or just the selected branch. When you are ready to print, click Print and prepare for your printer to flood the room with paper.

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Best Practices

Before you consider making changes to your registry, bear these points in mind

Should you damage or corrupt your registry, you'll bring the whole of Windows XP down with it. To avoid problems, or at least to minimise their effects, try to follow a few simple guidelines.

First, make a backup copy of the registry before you change anything (we'll show you how to do this in the next chapter). Second, never attempt to replace the Windows XP registry with a registry file from an earlier version of Windows: it simply doesn't work. Third, don't leave the Registry Editor running unattended: always close the program when you aren't using it; it's all too easy for fiddling fingers to make alterations in your absence. (Don't assume that no one will fiddle with regedit; it's amazing how much damage ignorance can wreak.)

Finally, consider whether you need to make the edits manually at all: often the parent program will have configuration screens that you can use, and it's easier to tick boxes and press buttons than it is to change value entries. Opt for an easy life whenever you can.



Explore the Options or Preferences dialogues in your applications. You'll usually find all the configuration settings you need there. You'll normally find these on the Tools Menu of most programs.

Tweaking the Registry

There are tools for the most common registry editing tasks

Often, you don't have to get your hands dirty. Tweaking tools generally make alterations to the registry without you needing to know which keys and values to change. They often automatically back up the registry in case of problems. It also makes undoing your changes quick and easy. One such program is Tweak XP, which is available on the cover disc (or from the link below). This offers a huge number of tweaks and customisations. These are simple to invoke: just tick the relevant boxes. We'll return to third-party Registry Editors later in this Guide.



Tweak XP is just one example of a program that edits the registry for you.

www.totalidea.com

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BackingUp

Your best protection against registry problems is having a recent reliable backup

Microsoft Windows xp

Yes you can…

- Find the registry files
- Back up and restore the registry using Regedit
- Use other backup methods for greater security

Project time…

35 mins

More Info



www.microsoft.com/windowsxp

Like completing tax returns, backing up is one of those things that you tend to put off. However, put either of these tasks off for too long and you'll end up in trouble. Unlike a tax return, however, backing up is quite simple and it really can save your bacon.

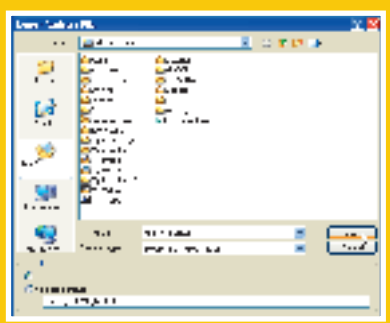
The registry is such an integral part of Microsoft Windows XP that it can wreak havoc if you mess it up. However, if you have a backup of the registry, the worst that can happen is that you will need to restore the backup. This is why it's a very good idea to back the registry up before you make any changes to it.

Copying Files

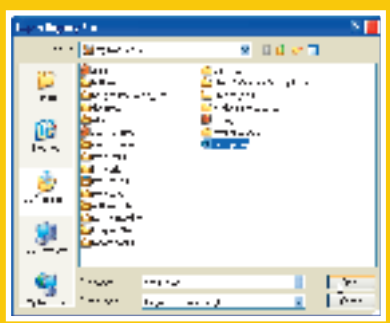
In this chapter we'll go over ways to back the registry up, from the simplest export from Regedit to the more complex copying of the files that contain the registry from their location on your hard drive. It's very difficult to copy files that are in use, which is why you might need to quit Windows to do this. If your system has a dual boot, enabling you to start in Windows XP or Windows 2000, you could easily copy the files by



Page 22 Find out where the registry files are stored in Windows XP



Page 23 Use the Registry Editor to back up the registry



Page 24 Restore the registry from a backup file using Regedit

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booting into the other version of Windows, ensuring that they aren't in use.

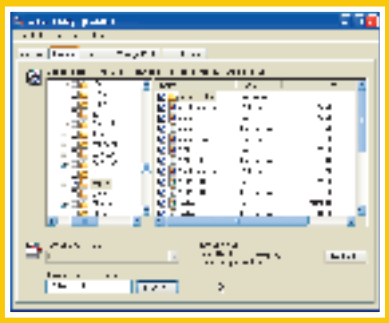
Using Regedit

A simple export of registry files from Regedit will do fine for most purposes, but a full registry backup is best handled by a backup utility that can operate outside of Windows. The Automatic System Recovery Wizard, available in Windows XP Professional Edition can do just this. When it comes to restoring the files, you boot using a specially made floppy disk, which handles overwriting the files. This makes sure that the registry isn't in use at the same time.

It's unfortunate if you are running Windows XP Home Edition because you don't have access to the Backup Utility or the Automatic System Recovery Wizard. Looking on the bright side, however, you did pay somewhat less for your copy of Windows XP, so why not spend some of the cash you saved on a drive cloning program? Norton Ghost or Powerquest Drive Image will take a full backup of your hard drive, including the registry. It seems like overkill, but you'll end up with a very reliable fallback.



Page 25 Use Last Known Good settings to get Windows XP booting again



Page 26 Back up files using the Backup utility in Windows XP Professional Edition



Page 29 Find out how easy backing up is when you use a drive cloning program

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Where is it?

Find out just where all that registry data is really stored on your PC



Modifying or deleting any system files is a risky business, but changing registry files is doubly so: a damaged registry will stop Windows XP from booting correctly. The only way to fix this is by having an undamaged backup to restore.

One of the reasons why people feel daunted by the registry is that it doesn't seem tangible. Every bit of software on your PC is virtual, in that you can't really touch it, but the registry is further detached from you because you don't even see it.

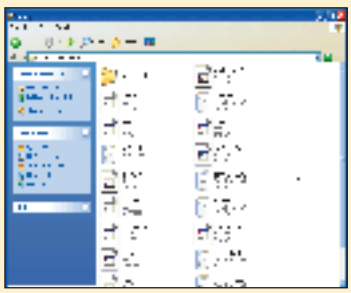
When you launch the Registry Editor, Regedit, you will see a representation of the registry database that appears pretty similar to Windows Explorer. You may well have been told, in no uncertain terms, by an IT department at work that the registry is not to be tampered with. They are quite right because large networks become enormously complex. However, there's nothing wrong with taking a quick peek on your home PC.

The box below shows you how to find the files that contain registry data. You may be forgiven for being underwhelmed. They look pretty much like any other system files. Deleting or modifying them is a definite no-no, but you may take a copy to a different location if you want to do a closer examination.

Find the Files

Have a poke around the files that contain the registry settings

You'll find the registry contents in the config folder, which is within the System32 folder in the Windows directory of your primary hard drive. To browse to it choose Start > My Computer and double-click drive C, or whichever one holds Windows XP. Open the Windows Folder with a swift double-click and do the same for the System32 one. Now open the Config folder and try to resist the urge to delete files at will. Feel free to copy the contents to another location: choose Edit > Select All, and right-click and drag the files to your chosen place. Release the mouse button and choose Copy Here.



There lie the contents of the registry. Not much to look at, but you'd be lost without them.

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Backing Up

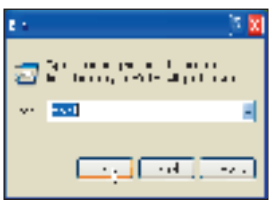
Cover your bases by using Regedit to back up the registry

By now you should have developed a pretty good idea of why you need to back up the registry: you need to have a fallback option if your editing goes wrong, which is something that can happen quite easily. Windows XP does in fact automatically back up the registry from time to time, but it would not be a good idea to rely solely on this feature. Taking a manual backup is easy, doesn't take very long, and the peace of mind you will get is well worth the tiny bit of extra work.

The Registry Editor, Regedit, enables you to export a registry file. This may hold a key, a hive, or the entire registry. You can import the data saved in this file to a different registry or you can use it to restore your registry in case of disaster. The former option is generally used to provide fixes for registry settings, usually those related to a specific item of hardware or software. Because many PCs differ in hardware and software, it is rarely a good idea to export your registry settings for use on another machine.



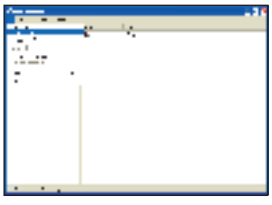
Never import registry files unless they are of your own making. If the file comes from a trusted source and you understand what its contents are, consider using it only after you have backed up your registry. If you are ever in doubt, don't use the file at all.



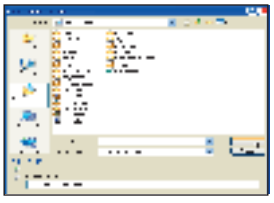
1 Choose Start > Run and type 'regedit' into the box marked Open. Click OK. This launches the Registry Editor, Regedit, which is the program that you'll use to edit the registry. It also contains some useful backup features.



The registry is a complex database. When you have a backup you can restore it to the time when you backed it up. Any changes that you made since the time of backup will be lost. Back up the registry each time you make a change.



2 You can save the whole registry to another location or opt to save a single hive or key. In this case we'll save the whole lot. From the File Menu, choose Export. This will enable us to save the registry data to a different location.



3 Browse to the file location you want to use. If in doubt, use My Documents. Under Export range, select All. Give this registry file a name and click Save. It may take a few minutes for the registry data to copy to the new place.

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Restoring the Registry

A backup is no use at all unless you can restore it. Here's how…



Registration files may contain a value entry, a key, a hive or the whole registry. You don't have to launch the Registry Editor to apply one to the registry. Just find the file and double-click it to launch it.

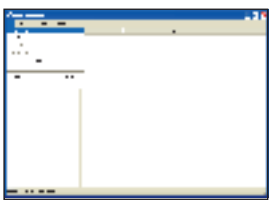
Restoration is just as important as backing up: if you take lots of backups, but are unable to restore them when they are required, you will be in the same situation as if you had taken none at all. It is therefore also important that you keep track of exactly where you saved the registry backup file and that you make sure that you know how to restore it.

If you are able to boot into Windows XP, you can restore your backup file using the Registry Editor. It's a similar process to that of exporting a registry file. In this case, however, you would choose Import instead of Export from the File Menu and browse to the backup file.

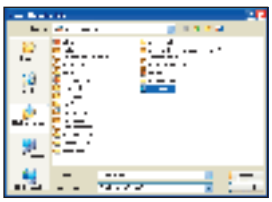
By default, Regedit searches for registration files with the .REG file extension, but you can alter this so that it looks for Registry Hive files or even so that it widens the search to include all available file types. To do this, change the setting on the drop-down list labelled Files of Type at the bottom of the Import Registry File Dialogue. The default setting is the most commonly used one, however.



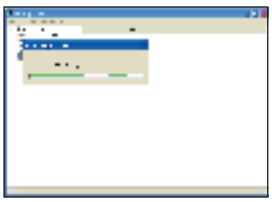
Avoid registry files that come from unreliable sources. Cleverly crafted .REG files can damage the registry, compromise your security or even launch viruses. Unless you have good reason to trust a third party .REG file, stick to using those of your own making.



1 Open the Registry Editor in exactly the same way as you did when backing up the registry. You now need to point the program at the backup to restore it. From the File Menu, choose Import to start searching for the file.



2 You are searching for registration files, which have the file extension .REG. Select this from the drop-down menu marked Files of Type. Browse to the location where you saved the backup.



3 Select the backup file and click Open. Regedit now activates the file and replaces the current registry entries with those contained in the backup file. Close Regedit and restart Windows to finalise the restoration.

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Last Known Good

Find out about this simple way to save your bacon if you can't boot into Windows

Sadly, damage to the registry often results in Windows XP being unable to boot correctly. If you can't get into Windows, you can't access Regedit, which means that you won't be able to restore your backup. And without restoring the backup, you can't boot into Windows: Catch 22.

There are ways of accessing your registry backup without getting into Windows, but they are complex and rather involved. You'd be better off restoring from a full backup of Windows rather than trying to locate your registry backup. This will work fine, but is rather like taking a sledgehammer to crack a nut.

Your best option is also the simplest. When Windows won't boot, restart your PC. You'll be confronted with a menu including the various Safe Modes and Last Known Good Configuration. Selecting Last Known Good instructs Windows to restore the last registry settings that worked from its automatic backup. In most instances, this will be enough to get Windows XP back up and running.



Don't use Last Known Good if Windows failed to boot because the power supply was interrupted. This will overwrite a working registry with an older one, which could introduce instabilities. Choose to start Windows normally instead.

History of Last Known Good

This rescue has been around in earlier versions of Windows

If you used Windows 95, 98 or Millennium Edition, the appearance of the Last Known Good Configuration as an option after a failed boot may well be a new thing. However, users of the corporate versions of Windows, including Windows NT and 2000 will probably be a little more familiar with it. Last Known Good first appeared in Windows NT, as is explained to visitors to the website listed below. The feature was hidden away in the Hardware Profile/Configuration Recovery Menu, but it was still there, never the less.



Last Known Good Configuration quickly gets your PC back on its feet.

www.netadmintools.com/art290.html

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MS Backup

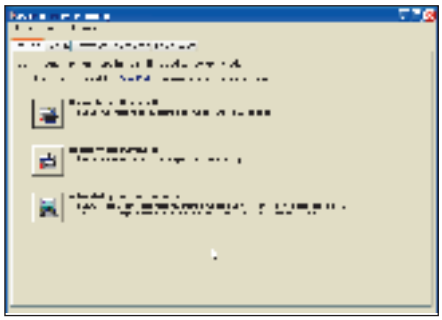
Only available in Windows XP Professional Edition, this provides a thorough backup

www.anderssoftware.com

If you use Windows XP Home Edition, you won't have access to the Microsoft Backup program. However, No Hands Backup provides similar functions and you can download it from the displayed link. It's free, but the author welcomes donations.

Consider a general solution when backing up the registry. Any program that is capable of copying and restoring the registry files will provide you with an adequate backup. Windows XP Professional Edition has a built-in backup program that provides a range of features, including a way to back up your whole system and be able to restore it all from scratch.

Launch the program by choosing Start > All Programs > Accessories > System Tools > Backup. By default it opens in wizard mode but if you need to specify individual files and folders, switch to advanced mode. See below for a more comprehensive guide to MS Backup.



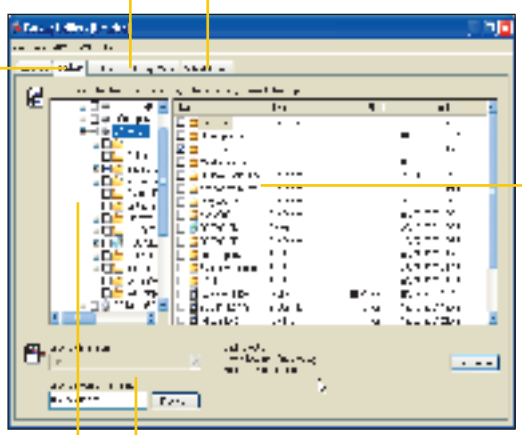
You can use the Backup Wizard to quickly back up your PC.

Backup Utility

Restore and Manage Media. Use this tab to manage your backup devices and media.

Backup Tab. Select this to specify each file and drive you want to back up instead of using a wizard.

Drives and folders. Select a drive or folder to see its contents in the right-hand pane.



Schedule Jobs. Choose this tab to set up automatic backups, so you can run them unattended.

Select backup data. Check the boxes next to items that you want to back up to let the program know what to copy.

Backup destination. Browse to the backup destination and provide a filename for the data you wish to be stored.

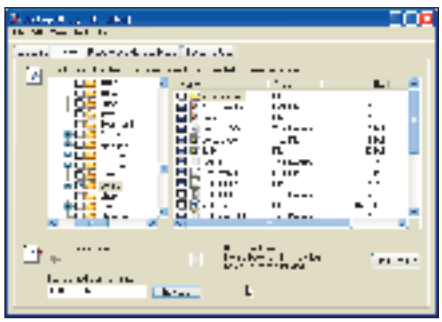
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How Many Backups?

The more backups you take the better, but you must keep track of them

A simple rule of thumb to apply when considering the number of backups you need is 'you can never have too many'. However, if you don't keep track of them and can't lay your hands on the right one when you need it, you might find yourself in a bit of a muddle.

The point of a registry backup is to ensure that you have a copy of the registry safe that holds all your current system information. You should therefore take a backup every time you make a significant alteration to your system, like adding or removing hardware and software. Your backups need to be accessible and robust. Save some of them to removable media.



Back up the files in C:\Windows\System32\Config for a full registry backup.



Having a backup on removable media will safeguard you against hard drive failure. Consider using CD-RW or Zip disks to store your backup. Recordable DVDs are becoming more affordable for big backup jobs.

- **Take a** straight copy of the files in C:\Windows\System32\Config onto a CD or other removable medium. You can't do this directly in Windows XP, but either use a multiple boot setup to access the files or use a backup program that works outside Windows.
- **Run Backup** in Windows XP to store a copy of the registry in C:\Repair. This is used to restore the registry by the Windows XP Setup program (Professional Edition only).
- **Back up** C:\Repair to a different location, preferably on removable media to have a standby in case of hard drive failure.
- **Use a** cloning program such as Norton Ghost 2003 to back up your whole Windows partition or drive. Use recordable CDs or DVDs, if available, as these safeguard against hard disk failure.
- **Get the** Automated System Recovery Wizard to save several sets of files from which your whole system can be recovered (Professional Edition only).



Keep any backups you make in a secure place. The registry contains important information about your system settings and configuration. If your backups fell into the wrong hands they could be used to compromise your security.

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ASR Wizard

The ASRW saves Windows files, the registry and the system state



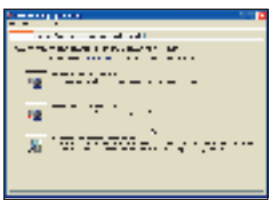
It's very unusual to find a tape drive in a desktop PC, although they were once commonplace. Digital tape is still a popular backup medium in business, as tapes can handle quite a large volume of data and are easily removed for storage off site.

Windows XP Professional Edition comes with the ASRW (Automated System Recovery Wizard), as part of the Microsoft Backup Utility. You'll find it at Start > All Programs > Accessories > System Tools > Backup. Windows XP Home edition doesn't include the Backup program so you can't use the ASRW either. You'll need to invest in a good quality third-party backup program.

You can choose the ASRW when you start up the Backup Utility. It then asks you for the destination of the backup – choose a different drive or partition to the one carrying Windows. A full backup of the system drive is then saved to this location. The time this takes depends on the amount of data on your system. The registry will be backed up to C:\repair. Finally, the System State is saved. This includes all boot files used to start up Windows XP and the registry files relating to Windows configuration. The floppy disk will enable you to recover these backups even if you can't boot into Windows XP. Keep this disc safe.



You can make a hard drive into removable storage by installing a drive caddy. This will enable you to remove and restore hard drives easily. Many companies use them to keep data securely under lock and key overnight, but a secondary drive kept safe in a caddy becomes a handy and quick backup location.



1 When you start the Backup Utility, you are presented with a choice of wizards. Select the Automated System Recovery Wizard. You need to give a file name and location for your backup.



2 The utility recognises tape streamers, Zip disks and your hard drive, but it won't write to CD-RWs. It performs a full backup. When the backup is complete, you are prompted to insert a floppy disk to save your system settings.



3 To restore your system using the automated system recovery disk, put your Windows XP CD into your CD drive and boot from the CD. Press [F2] when asked during the text mode of setup and put your recovery disk into the floppy drive. You will be guided from there.

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Cloning Programs

Take a complete copy of your hard drive using a cloning or drive image program

For the sheer convenience of a program that you can run to take a backup of your system with minimal configuration, you can't go far wrong with a cloning program. Programs such as Symantec's Norton Ghost or Powerquest's Drive Image will take a complete backup of your registry because they can take a complete backup of your hard drive.

The problem that many backup programs face is that it is hard to back up files that are currently in use. When Windows XP is running there are always going to be files currently open. Cloning programs get around this problem by performing the backup outside windows. You get a compressed file that contains everything that is on your hard drive. For the quickest backup, save this to another partition or drive. For a robust backup, use CD-Rs or another form of removable media. When it comes to restoring the backup, you overwrite your hard drive with the original files that have been stored in the backup file. It's simple and easy.



Cloning programs can make it easy to copy the software on your PC. You may not do this if you intend to 'restore' the backup on another computer – that's software piracy and your local law enforcement agency will take a dim view of it.

Norton Ghost

Take a complete snapshot of your system

Norton Ghost 2003 will clone your hard drive to a different drive or partition with ease. It works with CD-RW drives, recordable DVD formats and USB or firewire connections. As with most cloning programs, all backing up occurs outside Windows XP, but you can set up the backup job within the comfort of Windows. Your computer reboots to complete the job. You can back up to a different PC on your network or clone an entire PC, as long as the hardware is identical and you are licensed to copy the operating system.



Norton Ghost 2003 can back up your hard drive to CD, DVD, or another PC.

www.symantec.com

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Chapter 3

Registry Tour

Hold on to your hat, as we go on a whistle-stop tour of the Windows registry

Microsoft Windows xp

Yes you can…

- Identify the main registry hives and their uses
- Understand the main subkeys in HKEY_LOCAL_MACHINE
- Learn where hardware and software configuration data is stored

Project time...

40 mins

More Info



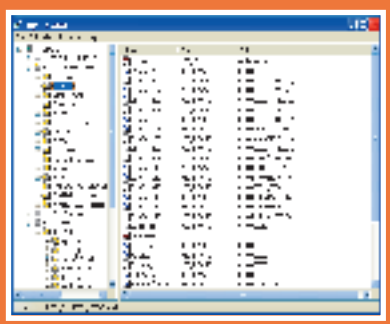
www.microsoft.com/windowsxp/expertzone

There's no escaping the fact that the registry is a complex beast. It contains numerous settings and configurations, which is one of the reasons why people are a little nervous of entering here. However, once you get the hang of the general structure of the registry and what each part does, you can demystify it and begin to view it as a definable entity.

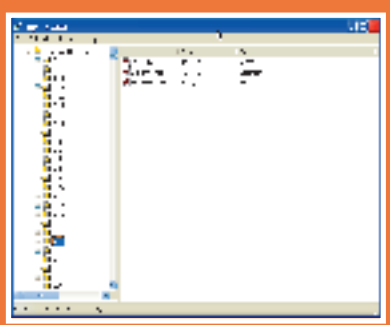
We've already found out about the main levels of the hierarchy. Hives contain keys, which contain subkeys. Subkeys contain value entries which have a data value and a data type. In this chapter we'll take a look at the different hives and find out what they do. We'll also examine some of the more important keys and subkeys to get a clear idea of which of these perform important functions.

Local Machine

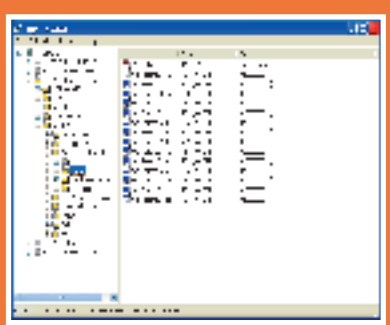
While there is a hierarchy in the registry, you'll find that some keys and even subkeys might have more important functions than some hives. Some parts of the registry carry more weight than



Page 33 Duplication of data in the registry and the formation of aliases



Page 34 See where the contents of HKEY_CLASSES_ROOT come from



Page 35 HKEY_LOCAL_MACHINE is the weightiest hive in the registry

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Microsoft Windows xp

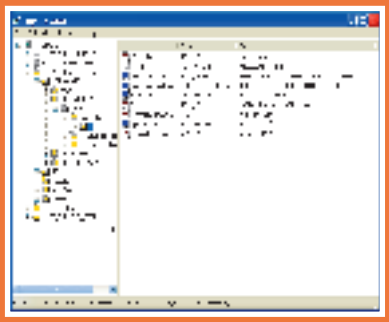
others. In the following pages we'll focus on HKEY_LOCAL_MACHINE more than other hives, simply because it has more areas that are available for editing than the others. There's also quite a lot of complexity in this hive, because it deals with the configuration of your computer, which will be of most interest to users keen to gain more control over their PCs.

Some areas in the registry appear to be duplicated in different hives. This isn't strict duplication, but is in fact a clever way of showing the same information in two or more places. These places are called aliases and we'll explain how this works in a little more detail on page 33.

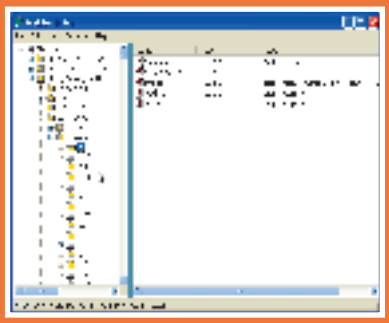
Hardware and Software

Every hardware device and each application installed on your PC will have detailed registry entries. We'll point out where you can find these entries and how they relate to your devices and programs. You may even recognise some of the settings that you've entered in the preferences of your applications reflected in the value entries of the relevant keys.

You can view security information in the registry and gain two new acronymic friends in SAM and SID, but the advice is to look but don't touch. Some areas are best not to edit directly.



Page 36 Discover where the hardware configuration data is stored



Page 37 How software options and preferences are logged by the registry



Page 38 Edit your privileges if you can't view the registry's security information

RegistryTour

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Registry Structure

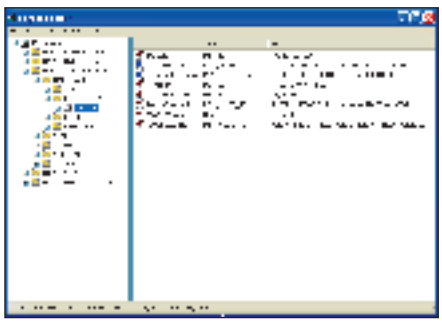
The basic structure is quite simple, but it gets more complex as the registry grows



Have you got an up-to-date system backup? If not, make one now. Even if you have a recent system backup, make a backup of the registry before you do any detailed exploration. See Chapter 2 for details.

Knowing how the registry is organised will help you find your way about. You've read about the levels of the hierarchy (hives, keys, subkeys, value entries and data values). These relate to one another in subtly different ways, depending on the part of the registry in which they reside.

While you can't delete hives without seriously damaging your system, some are more important than others: that is, some contain more keys than others, but then some keys have a greater weighting than others. It's important to appreciate the functions of different parts of the registry before you dive in and make changes.



Once you're happy with the structure, the functions of each part will fall into place.



Choose Help Topics from the Registry Editor's Help Menu. Here you can look up any registry term and find a concise explanation. There are lots of useful tips and instructions here too.

- **There are** five main divisions (hives) in the registry: HKEY_CLASSES_ROOT, HKEY_CURRENT_USER, HKEY_LOCAL_MACHINE, HKEY_USERS, and HKEY_CURRENT_CONFIG.
- **For ease** of use, these are often abbreviated to HKCR, HKCU, HKLM, HKU and HKCC respectively. We'll only use abbreviations here if the hive has been named before on the same page.
- **Hives are** sub-divided into keys, which are further divided into subkeys and value entries. These have a data type and a value.
- **Some hives** contain duplicate information from other parts of the registry. For example, HKEY_CLASSES_ROOT contains information identical to that in HKEY_LOCAL_MACHINE\Software.
- **Some parts** of the registry are more important than others. If you lose the system component of the registry, you won't be able to boot into Windows XP. If you have no backup you will have to do a full reinstall. Other objects, however, will hardly affect your system.

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Duplication

There's lots of replication in the registry; find out what gets repeated and where

The registry can get quite repetitive, or so it may seem. In fact, however, when you see data from one part of the registry also stored elsewhere, you may not necessarily be looking at a copy of the first set of data: quite often parts of the registry appear to be in two places at once (this isn't quite as complicated as quantum mechanics, even if it may seem to be so far!).

The explanation is this: making sure that the two sets of data are synchronised with one another could be a tricky task, with changes to the registry occurring all the time. However there is an elegant solution. Instead of using two copies of the data, the registry uses the same set of data in both places.

A simpler but similar example might be that of placing a shortcut to a folder of files on your desktop. You can find the files by browsing to the folder's location using Windows Explorer, or by launching the shortcut. One refers to the other, so that, for ease of use, it appears that the files are on your desktop, even though they aren't.

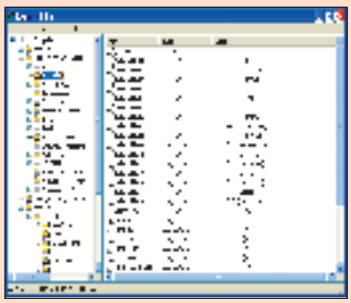


In versions of Windows prior to Windows XP, the desktop contents were kept within the Windows folder. This caused quite a drag on the system, especially if you had big files stored on the desktop. This is why many people got into the habit of only keeping shortcuts there.

Alias Assumed

The registry doesn't include shortcuts, but it does have aliases

The term 'alias' is usually used to refer to someone living under an assumed name. However, in the Windows XP registry the term refers to areas of the registry that mirror information. For example, HKEY_CURRENT_USER is an alias of either the .DEFAULT user or the current user in HKEY_USERS. The information isn't actually duplicated; there are merely two routes to finding it. Aliases are set up by Windows XP itself. It isn't possible to create aliases by editing the registry. If you change the data in a part of the registry that has an alias, the data changes in the other location automatically.



Looks familiar? That's because HKEY_CURRENT_USER contains the same info as HKEY_USERS.

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Root and Config

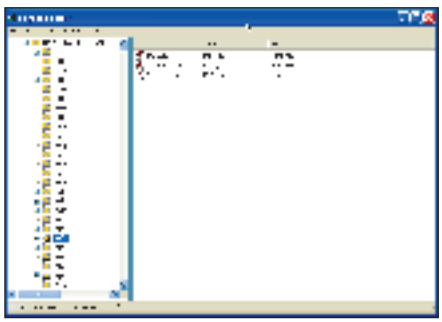
These two are aliases that mostly handle file associations and configuration data



Both HKEY_CLASSES_ROOT and HKEY_CURRENT_CONFIG are aliases of parts of HKEY_LOCAL_MACHINE. Programs may need to access the information from different places, which is why these exist.

HKEY_CLASSES_ROOT contains information mainly about file associations: which programs open which files. For example, if you double-click a .DOC file, Windows XP knows that it needs to open it using Microsoft Word because the information in HKCR tells it so.

HKEY_CURRENT_CONFIG contains data related to the hardware profile in use when you boot into Windows XP. You can store different hardware profiles and choose between them when you start up your PC, which is handy if you switch hardware regularly – for example, if you connect a laptop to other devices.



It will be useful to understand what these two hives are generally used for.



The data stored in HKEY_LOCAL_MACHINE is reflected in HKCR and HKCC. It's easier to do any editing within HKLM and its subkeys than to try to edit the aliases.

- **HKEY_CLASSES_ROOT** contains file association information. It is an alias of parts of HKEY_LOCAL_MACHINE\Software. The data in both places is identical.
- **HKCR is** included in the registry to ensure compatibility with the Windows 3.1 registry, which may be required by some software.
- **HKEY_CURRENT_CONFIG** is an alias created from elements of HKEY_LOCAL_MACHINE\System and HKLM\Software. Modify data in either of the source keys instead of editing HKCC.
- **HKCC** has two main keys: Software and System. In software you'll find application configuration information. You might find keys related to Microsoft Outlook Express or Microsoft Internet Explorer.
- **The System** key carries mainly hardware data. Not all hardware is listed here, but you'll find information about your graphics card and its configuration in a subkey. This is where settings for refresh rate, resolution and colour depth are stored.

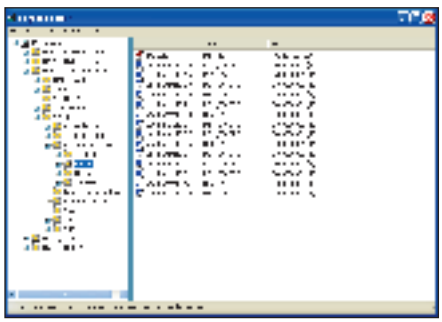
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HKEY_LOCAL_MACHINE

This is where we get down to the real guts of the registry

HKEY_LOCAL_MACHINE is the hive you'll work with most. Parts of it occur as aliases in other hives, making it a major component of the registry. It contains information relating to the PC currently running Windows XP. You'll find information about hardware, software, drivers and Windows configuration here.

The five main keys that make up HKLM are explained below. We'll examine some of these further over the coming pages. You often alter the contents of HKLM when you make changes in Control Panel or install or remove hardware or software. Changes in the System Properties dialogue are stored here too.



The System subkey contains data on drivers, services and boot information.



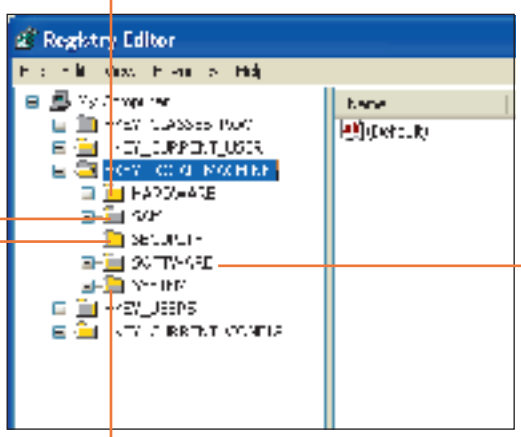
Editing HKEY_LOCAL_MACHINE shouldn't be undertaken lightly. Use Control Panel or another Windows configuration tool you can and only consider editing this hive manually as a last resort. A wrong move here can render Windows XP inoperable.

Meet the Local Machine

Hardware. Here's where hardware information is stored. It's recreated each time you start Windows XP.

SAM. This stands for Security Accounts Manager. It stores information about users and the network that your PC is connected to.

Security. This key includes information about user rights and security. On a network this information can become quite complex.



Software. This contains data on installed software products. Generally there is a subkey for each application containing its preferences and settings.

System. Here you'll find boot information, device drivers, as well as Windows XP configuration and its services.

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HKLM Hardware

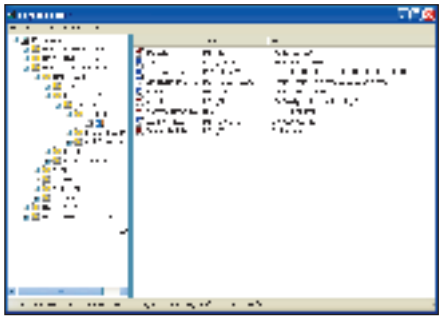
This key manages all the hardware that is installed on your PC

The number and type of subkeys in the Hardware key will depend on the devices you have installed. For example, if you have an ISDN device installed, you'll find an ISDN subkey in the DeviceMap subkey. Other systems won't list it.

The Hardware key includes information about your hardware configuration: everything related to your hardware. It is divided into four subkeys, though some systems will only have three if they do not support ACPI (see below).

The Description key is recreated each time you start Windows XP to ensure that the list is always up to date; it gives a general description of each hardware device.

The DeviceMap key provides full configuration information, while ResourceMap gives details of each major component installed on your system and what resources are allocated to it.



The Description subkey contains detailed information on all your hardware devices.

Several subkeys refer to SCSI devices. In this context, Windows XP defines SCSI devices as any drives, whether or not they are connected to a SCSI port or not. You'll find all IDE drives here as well as SCSI ones.

- **The Description** key contains a subkey called System, with four more subkeys: CentralProcessor (CPU data on vendor, speed and processor family); FloatingPointProsessor (describing the floating point unit); MultiFunctionAdapter (PCI bus and plug and play devices); and ScsiAdapter (hard disk and CD drives).
- **DeviceMap contains** data about devices and has six subkeys: KeyboardClass (keyboard information); Parallel Ports (parallel printer port data); PointerClass (mouse); SCSI (drives); SerialComm (serial ports); and Video (graphics card).
- **ResourceMap is** where device drivers map the resources they'll use. Each entry includes reference to I/O ports and memory addresses, physical memory and reserved memory, DMA channels and interrupts. It's divided into subkeys for each type of device.
- **ACPI** refers to Advanced Configuration and Power Interface; its subkeys vary according to the configuration of your system.

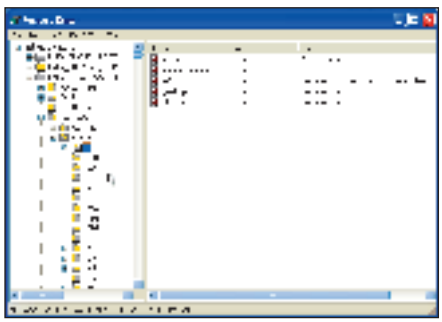
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HKLM Software

Here is the storage location for all software installed under Windows XP

The contents of HKEY_LOCAL_MACHINE\Software depend on the programs you've got. You'll generally find a subkey for each, though some programs may be grouped if they come from the same software house. The Microsoft subkey is an excellent example: in here you'll find further subkeys for each Microsoft application, though Windows XP accounts for many.

Each subkey will contain further subkeys and value entries that relate to the configuration of the program. You should see a direct relationship between the options, configurations or preferences dialogue in the program, and its value entries in this part of the registry.



Does the classes subkey look familiar? We saw this data in HKEY_CLASSES_ROOT.



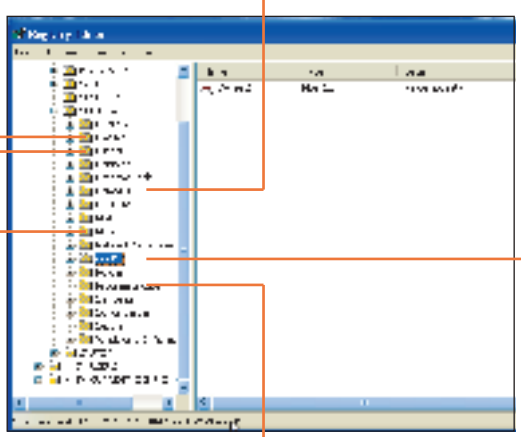
There is a subkey named Windows 3.1 Migration Status. This is all but obsolete, as few, if any people will want to upgrade a computer running Windows 3.1 to Windows XP. Few PCs running this early version of Windows had a specification great enough to handle Windows XP, but it's comforting to know that this upgrade is catered for.

What software subkeys do

Classes. This subkey contains file type associations which are also shown in HKEY_CLASSES_ROOT. Also includes Common Object Model associations.

Clients. The client server relationships are here. The best example is Microsoft Outlook which has entries on its complex data sharing.

Microsoft. Here you'll find entries for all Microsoft programs installed. There will always be some entries here.



Gemplus. Information here relates to the Gem\safe smart cards, which have a security role in Windows XP.

ODBC. This stands for Open Database Connectivity. This enables programs to fetch data from a range of locations.

Program Groups. You'll find a single value entry here, called ConvertedToLinks. It shows whether program groups were converted in this way.

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HKLM Security

Gain access to your security settings – and find out who SAM is



There is no reason why you should edit the security keys of HKLM directly. If you need to make alterations there are adequate tools for the task in Windows XP. Manually editing this area is just asking for trouble.

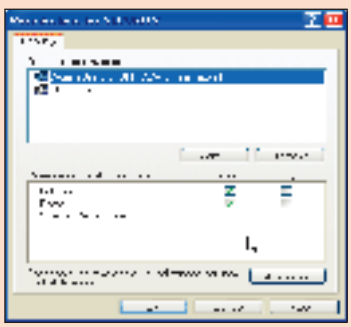
HKEY_LOCAL_MACHINE\SAM contains security information and user permissions and passwords. SAM stands for the Security Access Manager. It is an alias of HKEY_LOCAL_MACHINE\Security\SAM. The best way to make changes to the contents of these keys is to use the Microsoft Management Console within Windows XP. Launch this by choosing Start, right-clicking My computer and selecting Manage. Highlight Local Users and Groups and you can edit each user here. Changes made directly to the registry often result in problems with permissions and passwords.

HKEY_LOCAL_MACHINE\Security includes its SAM subkey, but is dedicated to PC security, including user rights and privileges, password policy and local groups. These policies are more important on corporate networks where your PC logs onto a domain; they will usually be dealt with by the network manager, using Active Directory admin tools. If you are a home user, or your PC is connected to a peer-to-peer network, leave well alone.

Have you got permission?

You need it to see the contents of the Security or SAM keys

If you can't see any entries in the SAM or the Security keys, it doesn't mean they aren't there; you probably don't have permission to see them. This is one way Windows XP protects its most vulnerable areas from general users. Permissions apply to the user account that is currently active. You'll need to be logged in as an administrator to change them. Launch Regedit and browse to HKEY_LOCAL_MACHINE\SAM or Security. Right-click the item you can't view properly and choose Permissions. Select the username that you want to upgrade and check Allow in the Full Control box.



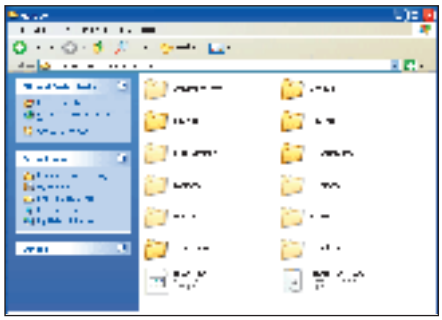
You may need to edit permissions to see these security subkeys.

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And the Rest

What about the other hives? And now we've met SAM, who's SID?

The Hives HKEY_USERS and HKEY_CURRENT_USER have much in common, including aliased data. HKEY_CURRENT_USER changes according to the user who is logged on. HKEY_USERS contains information on all stored profiles; each user has a Security Identifier, or SID, which consists of a letter S followed by up to seven groups of hexadecimal numbers, separated by hyphens. The S merely identifies it as a SID; the other numbers include data that refers to the user's settings and privileges. Each number has a meaning but all you really need to know is that the SID is used by Microsoft Outlook Express, for example, to label user settings.



You'll find the default user profile, settings and desktop at C:\Documents and Settings\default.



You can spot some references to the past within the default user profile. The files ntuser.dat and ntuser.dat.log refer to Windows NT, which preceded Windows XP and Windows 2000 as the operating system of choice for business.

- **HKEY_CURRENT_USER** manages information about the currently logged-in user. It updates as you changes your settings.
- **The user's** desktop settings, Start Menu items and display settings are all stored in this key. Connections to printers and shared disk resources are stored here too. The contents of HKCR can form the basis of a roaming profile on a network.
- **HKEY_USERS** contains data on each installed user who has a user profile. It includes two subkeys: one is called .DEFAULT; the other is based on the currently logged-in user.
- **The .DEFAULT** key provides information on the default profile: the one used when someone logs in without a stored profile. The full profile is stored in C:\Documents and Settings\Default User. It forms the basis of any new profile.
- **The data** on the current user is stored under that user's security identifier, otherwise known as their SID.



There's a hidden hive called HKEY_PERFORMANCE_DATA. You can't access or edit this hive, but applications that need to access performance data can. This hive is frequently updated and is where Performance Monitor information is stored.

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Chapter 4

Editing the Registry

Now you have found your way around the registry it's time to get down to the real work

Microsoft Windows xp

Yes you can...

- Create and modify keys and value entries
- Search the registry
- Secure the registry and audit attempts to access it

Project time...

50 mins

More Info



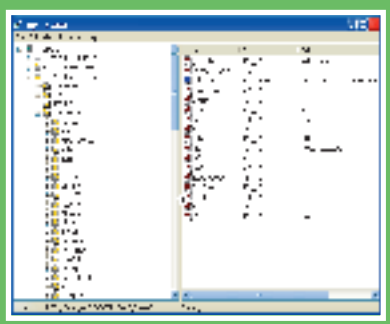
www.grc.com

The Registry Editor exists to enable you to make changes to the data stored in the registry, not just to view it. As long as you have made a recent backup (and if you haven't go back to chapter 2 and do so pronto) you can now dive in and make changes.

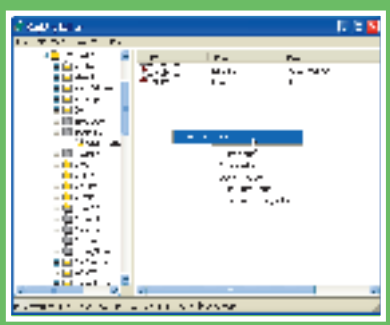
Even though you've been using Regedit for the past few chapters, now is a good time to have a quick look at its main features and functions. It's important to feel confident with this program because it is the primary way you'll make registry alterations.

Create Keys

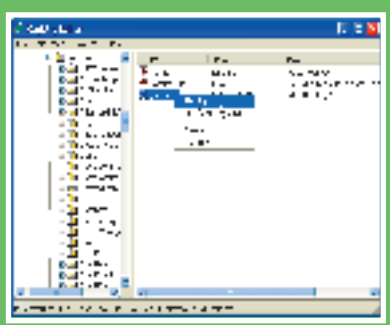
Once the tour's over, you can start practising your editing. You'll start by creating a new key, giving it a name and populating it with subkeys and value entries. To do this you'll need to create a new value entry, choose what type to create and give it a name. Value entries without data are practically pointless, so you'll need to learn how to modify the data value. This is a particularly useful exercise, since most common registry edits involve changing value entries.



Page 42 Find your way around the Registry Editor with our detailed tour



Page 43 Start editing the registry by creating a new key



Page 45 Try modifying a value entry; one of the most common registry edits

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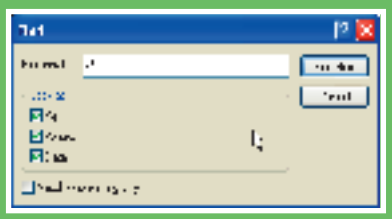
Microsoft Windows xp

Editing The Registry

The registry is pretty complex and if you need to track down a key or other object without knowing its exact location, you could be looking for a very long time. This is why the Find feature is included in Regedit. This scans the registry for your chosen number or string, saving you a whole heap of time.

Security

If you can search and edit the registry, so can others, be they people who share your PC, or online attackers. In this chapter we'll advise you on securing your PC while you're online and on how to test your computer's defences against internet attack. Setting permissions can stop people without your authorisation from having access to the registry. These permissions can be quite sophisticated, enabling limited access to some areas if you wish to grant it. You can offer differing access to different users or groups. The most popular setting is probably 'no-one but me', which entails denying access to 'everyone', administrators excepted. Auditing specific keys helps you monitor and enforce your permissions.



Page 46 Use Find to scour the registry for entries containing your search terms



Page 48 Set permissions for users of your PC, to tighten security



Page 49 Enable auditing so you can tell if anyone has tried to access certain keys

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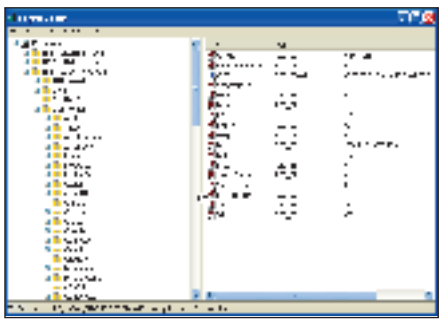
Registry Editor

It isn't the only way to edit the registry but it's probably the simplest

Windows 2000 had a Registry Editor called RegEdt32. For compatibility, you can launch RegEdt32 in Windows XP in exactly the same way as you do for Regedit. In fact this will launch Regedit, because Windows XP treats the programs as one and the same.

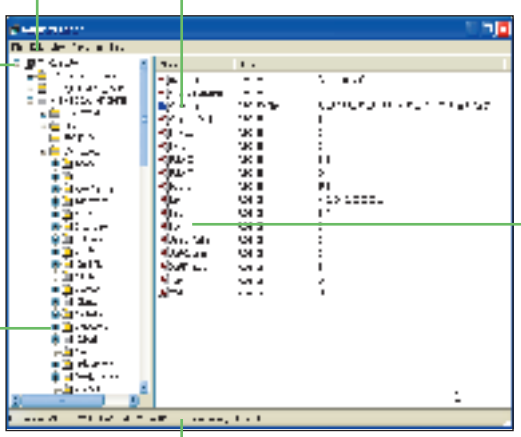
To edit the registry successfully, you need a registry editing program. The aptly titled Registry Editor or Regedit will do the job. It's Microsoft's program that comes along Microsoft Windows XP. You won't find it in the Start Menu, because it's not the sort of thing you want just anyone messing around with, but you can launch it by choosing Run from the Start Menu and then typing 'regedit' into the Open box before clicking OK.

Once Regedit is launched, you'll see the registry arranged in tree view in the left-hand pane. Click the plus sign next to any entry to see its contents. Any value entries appear in the right-hand pane.



Adjust the spacing of Regedit's two panes by clicking and dragging the dividing line.

Finding your way around Regedit



The Menu bar displays each of the menus in Regedit. You'll find the useful Import and Export tools under the File Menu.

Clicking the plus sign next to My computer expands the registry tree. Clicking the minus sign here hides it all.

These subkeys of the Software key can be expanded further by clicking the plus sign on the left-hand side.

Registry binary value entry. The number entered in this case determines column widths in the application concerned.

These are registry string entries. Each value entry here represents a string of characters.

The Status bar displays the current key. It's very handy because you can see at a glance where you are in the registry.

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Creating a Key

You may begin your registry editing training by adding a key

Editing the registry can provide you with huge potential benefits when it comes to the smooth running of your PC, if you take the right precautions and go about it in a sensible way.

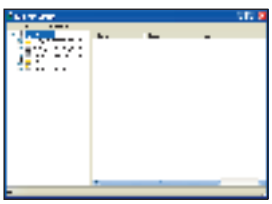
One of the most basic edits that you can make to the registry is to add a new key; in most cases, this will be the creation of a new subkey within an existing key. Once you've got the new key in place, you may wish to populate it with its own subkeys and value entries. New keys need to be created using the Registry Editor. Open Regedit and browse to the place where you want to create the key. Positioning is crucial: any software that you want to modify with the new key will need to know where to find it.

In general, you'll be creating keys to change the way a program behaves, although this is by no means the only instance in which you might consider key creation.

When you create a key, it initially has no name, just New Key and a number. You'll have to rename it with a label of your choosing.



When you are following a suggested edit to the registry, you need to be accurate. Key names are case sensitive, so type them carefully with capital letters in the right places.



1 Launch the Registry Editor by choosing Start followed by Run. Type 'regedit' into the Open bar, or select it from the drop-down list if you've launched it before. Click OK. Expand My Computer to show the main hives.



2 Expand the hive in which you want your key to reside by clicking the plus sign next to it. Expand the keys and subkeys until you reach the location for your new key. Right-click over the right-hand pane and choose New > Key.



3 The new key shows in the left-hand pane, labelled New Key #1, if it's the first key you've made. Click within this key and enter the name you want it to go by. Select it and add any subkeys and value entries into it.



Don't be tempted to correct the registry's grammar by adding spaces between words: it's a finicky beast and will interpret two words separated by a space as a different entry to those same words stuck together.

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Adding a Value Entry

Keys are nothing without value entries; learn how to create one here



If you need to rename your value entry, you can do so at any time. Just browse to the entry and right-click over it. Now choose Rename from the Context Menu and enter the new label.

Once you've created a new key, you will probably need to create value entries to sit inside the key. Without value entries, the key itself will prove pretty pointless – although there are some instances when the absence of data has significance, if you want to be pedantic about it.

Making a new value entry is a similar process to the creation of a key, although you will need to specify the type of value entry. Browse to the key that you want to house your new value entry. Now right-click over the left-hand pane as if you wanted to create a new key, only now you are going to choose the kind of value entry you want to add – if you are following instructions, these will include the type of value to use.

The type of data you need to store will also provide a clue. For example, you won't be entering a word in a kind of entry that only accepts numbers. The length of your entry will also determine its type; an expandable string holds more words than a fixed one.



The naming strategy for value entries is every bit as strict as that for key names. When copying names check every character and its spacing and ensure you use Capital Letters as instructed.



1 Open the Registry Editor in the usual way. Browse to the key in which you want to create a new value entry by expanding the relevant hive and branches below. Existing value entries for this key appear in the right-hand pane.



2 Right-click over an area of empty space in the right-hand pane and choose New. An expanding menu appears, including the options to create a new key or one of the five most popular value entry types.



3 Select the value entry type you want to create. We've chosen a DWORD value. Initially this will be called New Value and a number. Select it and enter the value name of choice.

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Modifying Values

Changing the data in a value entry is a very popular editing job

Having created a value entry, you will need to give it a data value or it won't have much use, although the default value is zero, which may have significance in some situations, if, as we said before, you want to be pedantic.

If you've just created the value entry, double-click it to enter the data. The dialogue box will depend on the type of value entry you created; those which hold only numeric data won't provide room for a string; binary values won't accept numerals 2 or above. The layout of the dialogue will suit the data being entered. If it doesn't suit this data, you've created the wrong kind of value entry.

Enter the required data and click OK. The new data will be displayed alongside the value entry in the right-hand pane of the Registry Editor. Where there is no string value set, the default is not zero. You'll see (value not set) next to the relevant entry. It's quite normal to see multiple zeros in the data column of Regedit. These are no more significant than a single zero.

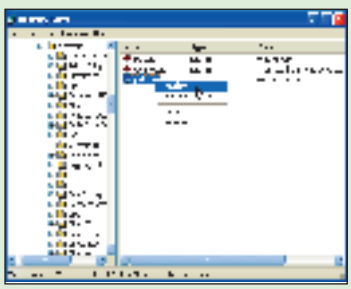


Can't handle hexadecimal numbers? When you're editing DWORD values, change the selection to decimal so you can deal with the kind of numbers that you can count up using your fingers.

Changing Values

Here's how to control the ever-changing values

Many configuration changes result in changes to value entries in the registry. Often software may not include items in its configuration or options dialogue that you can change by altering a value entry. First open the Registry Editor by entering 'regedit' into the open bar after clicking Start > Run. Now select the hive that contains the value entry you need to change. Expand the hive and its subkeys until you see the value entry in the right-hand pane. Right-click the value entry and choose Modify. You will be presented with a dialogue that will be different, depending on the type of data concerned.



Choose Modify to change the data in a value entry.

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Searching

How to locate keys or values quickly using the Find utility



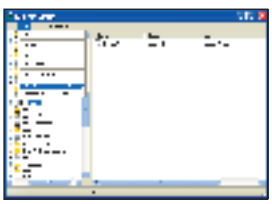
Narrow your search down by selecting the type of object you would like Find to uncover. Choose from keys, values or data. For a wider search you may select all three.

The registry is not something you would browse idly. You generally need to find a specific entry or work with a specified key. Where you have the exact location noted down, this isn't a problem, because you can simply work your way through the hierarchical structure to quickly find the entry you want. Where you don't have a note of the location, things get a little trickier. Finding the right value entry when you have the whole registry to scan is somewhat like looking for the proverbial needle in a haystack. Thankfully, help is at hand. Regedit has a Find utility that works in a very similar way to the ones included in the likes of Notepad and Microsoft Word.

Find nestles in the Edit Menu and can be launched by choosing Find… or Find Next. Type the string of characters that you want Regedit to locate and click Find Next. This takes you to the next instance of that string in the registry, starting from your current location. Click Find Next again until you reach the desired entry.



Find and Find Next are not case-specific. This is quite handy because many registry entries are mixed case and need to be that way to work properly. When you are searching you may well not know the case of the desired objects, so it's good to know that the case you use doesn't matter here.



1 Open the Registry Editor in the usual way. Select a position in the registry if you wish, or start with My Computer selected. From the Edit Menu, choose Find, or press [Ctrl]+[F] together on the keyboard.



2 This launches the Find utility. Enter the string or number that you want to locate. Check the objects that you want to include in your search. You can include keys, values and data.



3 When searching for a string, select Match Whole String only if you want the exact letters and numbers that you entered to be matched in their entirety. Click Find Next to jump to the next instance in the registry.

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Security

Protecting the registry from external attack is crucial to your system's security

The security of your PC is vital, even if you don't think you keep sensitive information on it. If your PC is compromised, you may not know about it until it's too late. Attackers are rarely after your data, although they might find any financial information you have of much interest; often the desire is to use your PC as a relay to pass on spam or viruses. They may simply be out to vandalise your system and destroy your data.

Whatever the motivation, the fact that the Registry Editor supports remote registry modification is cause for some concern. It's useful for network administrators to remotely alter PC's registries because it prevents a lot of running around. However, knowing that an unknown internet user could change your registry, rendering your PC unusable is chilling indeed. It's time to ensure your computer is adequately secured by installing a firewall. This enables you to control the flow of data into and out of your PC. The simplest option is the Microsoft Windows XP Internet Connection Firewall.



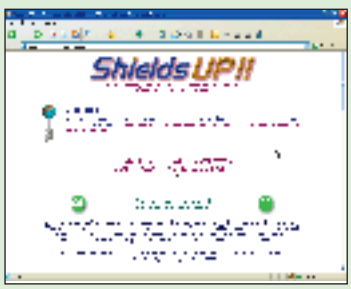
The link takes you to Zone Labs, the home of ZoneAlarm, a very popular firewall program. There is a free version available for personal use. It offers greater protection than the Windows XP Internet Connection Firewall, but not as much as some dedicated commercial products.

www.zonelabs.com

Get Secure

Turn in ICF and test your shields over the web

Choose Start > All Programs > Accessories > Communications > Network Connections. Select your internet connection and right-click. Choose Properties and change to the Advanced tab. Now tick the box under Internet Connection Firewall and click OK. ICF provides basic protection; you may need more if you have sensitive information on your PC. You can test your defences at the excellent security website, Shields Up, from Gibson Research. The site will simulate attacks on your computer and provide a full report.



The Shields Up website tests your PC's security.

www.grc.com

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Permissions

Setting permissions carefully can provide you with improved security



Make the permissions you set for a key apply to all the subkeys and values that it contains. In the Advanced Security Settings dialogue, check 'Replace permission entries on all child objects' with entries shown here that apply to child objects.

As an administrator (and if you are the default user of your PC you probably are one) you can select any registry object in Regedit and apply permissions to it. These apply to you and other users and you may use them to deny access to others or simply to prevent them from editing any settings. You can set permissions on any object from a hive downwards.

Simple permissions on an object include Full Control or Read access, but your can dabble with more complex settings should you wish to do so. By default the permissions set for a subkey will be inherited from its parent key, but you can opt to change this.



You can set permissions for individual keys, and for different individuals or groups.



Advanced permissions can be somewhat confusing as they each have a subtly different meaning. If you want to deny access, stick with the Permissions dialogue and select Everyone. Check all deny boxes and click Apply. Do this for each hive to stop anyone except an administrator having access to the registry.

- **To set** permissions for a registry object, browse to the object and select it using Regedit in the usual way. Choose Permissions from the Edit Menu and select the user or group that you want to change.
- **You will** need to be an administrator to alter permissions. With the correct individual or group selected, tick the boxes marked Allow or Deny next to Full Control, Read or Special Permissions.
- **To apply** special permissions, proceed as above, but press Advanced in the Permissions dialogue. This opens the Advanced Security Settings dialogue, which gives you more control.
- **Select a** user and click Edit. You can now Allow or Deny the following: Full Control, Query Value, Set Value, Create Subkey, Enumerate Subkeys, Notify, Create Link, Write DAC, Delete, Write Control or Read Access.
- **Use the** check-boxes in the Advanced Security Settings dialogue to determine what happens to child objects.

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Auditing

Collect data about users' or groups' attempts to edit or access the registry

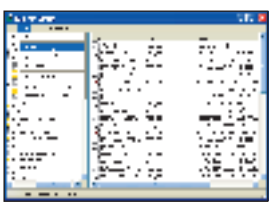
One of the problems with PC security is that it can be hard to know when it has been successful and when it has failed. Users may access the registry and make subtle changes without you noticing that anything is amiss. Often the first time you know about a security problem is when it is far too late.

Auditing enables you to keep track of users or groups activities relating to the registry. You can monitor individual objects in a very similar way to setting permissions for them. In fact you use the Permissions dialogue and the Advanced Security Settings dialogue, as we did on the last page.

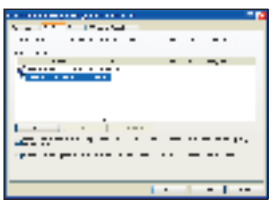
Auditing logs the successful or failed access to the chosen key. You can log any of the types of access provided in the Advanced Security Settings dialogue. Setting Auditing for the Everyone group will mean you can track attempted access by anyone trying to compromise your PC. Set up failure auditing for any keys that are closely associated with security for a list of access attempts.



You may have to add users or groups to your auditing list before your can audit them. In the Advanced Security Settings dialogue, choose the Auditing tab and click Add. Type the name of the user or group to add and click OK. This opens the Auditing entry dialogue.



1 Choose Start > Run and type 'regedit' into the open bar before clicking OK. Browse to the key that you want to audit and select it with the mouse pointer. Choose Permissions from the Edit Menu. Press the Advanced button.



2 Switch to the Auditing tab and select the name of a user or a group of users. Press the Edit button to open up the auditing entry for this key and the chosen user or group.



3 Select each of the items you want audited. This will log successful or failed access for each of the permissions listed on the last page. Bear in mind that auditing does affect performance, so use it sparingly.



Auditing can slow your PC down. This is particularly true if you have set it up to log a large number of events. Opting to log failures only, and minimising the number logged, will ensure that you don't drag performance down.

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Chapter 5

Advanced Editing

Pick up some expert tricks to impress your friends with your registry-editing skills

Microsoft Windows xp

Yes you can...

- Create registry Favorites
- Use Regedit and Reg.exe from the command line
- Edit the registry remotely across a network

Project time...

60 mins

More Info

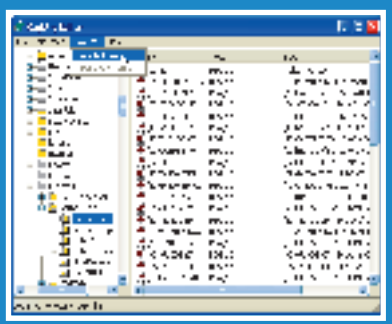


Once you've accomplished some simple registry edits and you've become more accustomed to working with the registry, it's time to consider how to expand your skills. It's all very well having taken a full registry backup, but how can you restore it if you can't boot into Windows? The answer is to use your Windows XP CD to boot into the recovery console. You can use the command line recovery tools or you could manipulate the registry directly from the command line. This is a feat that will impress even the most seasoned system administrator.

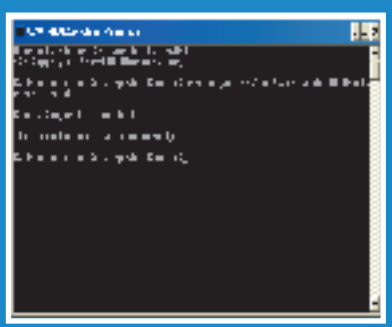
You can use Regedit from the command line, but the similar Reg.exe provides you with finer control. Both are outlined in this chapter.

More Control

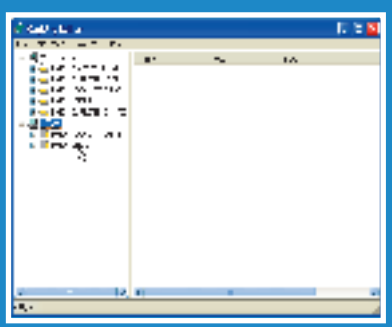
If you manage to resurrect your system from almost dead, you may want a little more control over Regedit. Setting Favorites enables you to quickly jump to the most popular keys, so you can concentrate on editing them, rather than wasting much of your time just navigating there.



Page 52 Set up Favorites so you can easily return to popular keys



Page 55 Use Reg.exe to edit the registry from the command line



Page 56 Connect to a remote registry over a home network

www.microsoft.com/windowsxp/expertzone

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Microsoft Windows xp

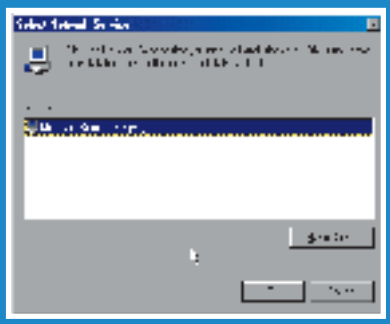
If you ever need to discuss a registry key in an email or just need to write out its location, you'll find Copy Key Name a very useful feature. It simply copies the full key name and location to the clipboard, so that you can paste it into a document later on. This saves a huge amount of time trying to write keys down manually.

Network Administrators

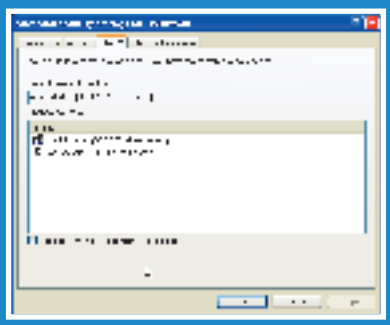
Network administrators sometimes have to manage a large number of PCs, many of which are spread about a large site. Editing each registry may be time consuming enough, but physically getting to each machine could easily multiply the task tenfold. This is why it's possible to edit registries remotely across a network, which may be handy if you have a home network. You can edit the registries of each of your machines, as long as they're turned on and connected to your network.

Many people have Windows 9x computers being used as a second PC. It's possible to set these up for remote registry editing, but you will need to install the right software for this. We'll show you how to accomplish this.

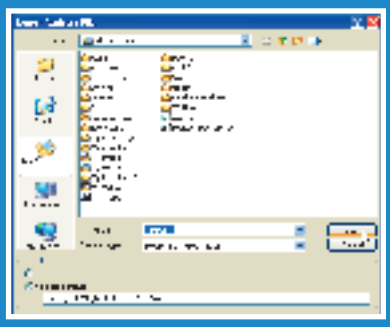
Finally we'll consider the issues of ownership of registry objects and also impart some helpful hints for speedy trouble-free registry editing.



Page 57 Set up a Windows 9x computer to receive remote registry connections



Page 58 Change the ownership of any registry object



Page 59 Learn some top hints for smoother registry editing

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Using Favorites

Get to frequently modified keys quickly by setting up Favorites.



You can select any name you want for the Favorite. This doesn't change the key name so the functioning of the registry is unaffected. It makes sense to use a name that will help you remember what the key does.

Anyone who has used Microsoft Internet Explorer will be familiar with the concept of Favorites. In Internet Explorer, a Favorite is the URL of a website that you visit often and choose to store so you don't have to type it in each time you visit the website. The Registry Editor also has Favorites. In this case, the Favorite is the name and location of a key that you intend to visit frequently. Instead of browsing to the key by opening the parent hive and its subkeys, you can move directly there with a single action. This is very handy if you regularly need to tweak the key concerned.

In order to set up a Favorite you will need to have the key that you want it to link to highlighted in the Registry Editor. Then you just select Add to Favorites from the aptly named Favorites Menu. You will be given a opportunity to give the entry a name that will help you to remember which key it relates to. From now on, you will be able to select the Favorite directly from the Favourites Menu.



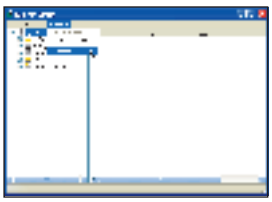
To remove an entry from your Favorites, select Favorites > Remove Favorite. This presents you with a dialogue containing all your favourite keys. Choose the one you want to remove and click OK.



1 Launch the Registry Editor by choosing Run from the Start Menu and entering regedit into the appropriate place before clicking OK. Browse to the key that you want to set as a Favorite. Check that this is correct by glancing at the status bar.



2 Select the Favorites Menu and choose Add to Favorites. This opens up a little dialogue with the name of the key entered. Change this to one that is easier to remember and press OK to confirm.



3 You can return to this key regardless of where you are in the registry, by selecting the Favorites Menu and choosing the entry that you just set up. This is much quicker than trying to navigate to it.

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Copy Key Name

Ensure that you get an accurate copy of the current key name

While Favorites can get you quickly to the keys you most often modify, there will be many times when you may need to transcribe a registry key name. Many can be long and complicated, once you include all the location information – HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Office\10.0\Word\Text Converters\Import\WrdPrfctDos is a good example. Imagine copying this verbatim without making an error, including maintaining all the cases. This is why the Copy Key Name feature is included. Browse to the key concerned using the Registry Editor. With it selected in the left-hand pane of Regedit, choose Edit > Copy Key Name. This puts the key name and its location information onto the clipboard, from where you can paste it into another program. Now move the cursor to the place where you would like the key name to appear and select Edit > Paste. The full key name including its location will be inserted into the document. There's no typing required.

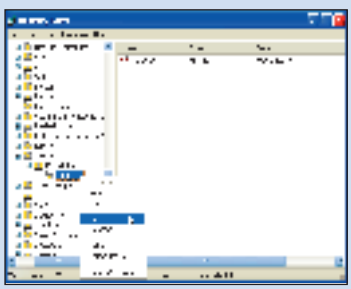


If you are writing instructions for someone else to follow, you may not write the key name and location correctly. Use Copy Key Name to store the name on the clipboard so you can paste it into your instructions.

Deleting Objects

Sometimes a key or value just has to go

Whether you need to remove the effects of a key or value entry or you are just hoping to get rid of some registry clutter, sooner or later you will want to delete something. Deletion is easy to do, but shouldn't be entered into lightly, even if you have a backup ready. The safe choice is usually to let the object be, unless it is actually causing you a problem or you are having a spring clean (see Chapter 6). If it really has to go, browse to it using Regedit. Select the offending object and right-click to open a Context Menu. Select Delete and confirm your choice when you are prompted to do so.



Right-click the offending object and choose Delete to get rid of it.

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Command Line

You can use Regedit from the command line, which may be handy in an emergency



To restore a registry object when in command line mode, type the following at the command prompt: REGEDIT [/L:system] [/R:user] filename, where the filename is your backup file and L and R are the values indicated in the bullet points below.

At this point, it may be useful to mention the difference between 'you can' and 'you should'. While it is possible to carry out Registry Editor functions from the command line, generally it's not a good idea to do so. You can potentially destroy the registry with a single command. If you can get into Regedit, it's best to make whatever changes you want there, where you have more control.

Command line registry editing is not for the faint-hearted, but you may have to make use of it as a matter of necessity. If you can't get into Windows and can only access the recovery console, it may be the best chance of restoring the registry.



If Last Known Good doesn't work you may need to restore the registry using the command line.



Use Search to find your system.dat and user.dat files, so you have the full location path to provide in case you have to use Regedit in command line mode. Save the locations in a text file.

- **To use** the Registry Editor from the command line, you'll need to boot into the Recovery Console. You can also open a command prompt window by choosing Start > Run, and typing 'cmd' into the open bar before clicking OK.
- **Using Regedit** via a command prompt while Windows XP is up and running fully is not recommended.
- **To carry** out Registry Editor commands, type REGEDIT at the command prompt, followed by up to three switches and a file name where appropriate.
- **[/L:system] is** the location of the system.dat file; replace the word system with this information. [/R:user] is the location of the user.dat file; replace the word user with this information. The filename is the full path of the file created, modified or deleted by the action.
- **Commands** include /C (create), /D (delete) and /E (export).

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Reg.exe

This program offers more flexible command line registry editing

Reg.exe comes as standard with Windows XP. It is a command line tool that provides more sophisticated commands than Regedit's command line tools. Reg.exe supports the following commands: Add, Copy, Delete, Export, Import, Load, Query, Restore, Save and Unload. To use it, first open a command prompt window (use Regedit's Windows interface wherever possible). Select Start > Run, and type 'cmd' into the open bar before clicking OK. Now type REG followed by the command and any parameters it requires before pressing return – for example, Add enables you to add a registry object. The entry at the command line should take the form: REG ADD registrylocation = value [data type]. You can even specify a remote computer registry if you wish, because Reg.exe will support modifying remote registries. The registry location is the full path to the object concerned. You can abbreviate the main hives, though it will assume KEY_LOCAL_MACHINE if you don't specify a hive.

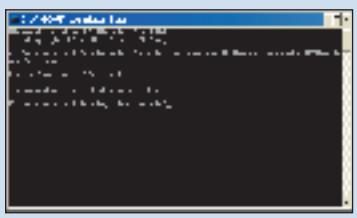


Restore will restore a registry object from a file saved using the save command. Use the following syntax: REG RESTORE [filename] [registry path]. Unload effectively deletes the specified object using REG UNLOAD [keyname].

Reg.exe Commands

We've met Add, but what do the others do?

Compare and Query both examine the contents of keys, producing a comparative value. The syntax of Compare is REG COMPARE [1st keyname] [2nd keyname]; Query has the same syntax but more switches. Copy copies a registry object (REG COPY [oldpath] [newpath]. Delete deletes an object (REG DELETE [registry path]). Export exports an object to a file (REG EXPORT [keyname] [filename]). Import imports a registry file (REG IMPORT [filename]). Load installs a registry object from a file (REG LOAD [filename] [keyname]). Save converts a registry object to a file (REG SAVE [registry path] [filename]).



Compare enables you to weigh up the value of two different keys.

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Remote Registry

Edit the registry of a different computer on your network



You can do as much damage to a remote registry with unwise edits as you can inflict on the local one. Bearing this in mind, it's important to disconnect from the remote registry as soon as you have finished with it, so there's no risk of making alterations to the wrong one.

Remote registry editing is a mixed blessing: it enables network administrators to edit the registries of many PCs without having to walk to each one in turn, but it could also be a security risk (see Chapter 4 for ways to keep your registry secure).

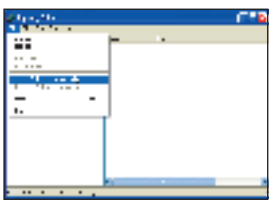
You can connect to a remote registry using the Registry Editor. Launch Regedit in the usual way and choose File > Connect Remote Registry. You are then presented with the Select Computer dialogue. Here you can enter the desired computer's WINS network name, or opt to browse through the local network machines. To do this, press the Advanced button, which opens a larger dialogue. Now click Find Now to uncover the PCs that are connected to the local network.

All you need to do now is select the PC that you want to edit and click OK twice. The network registry will display alongside the local registry in Regedit.

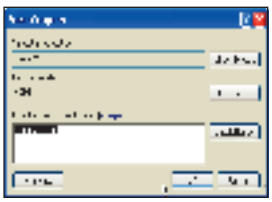
This makes it easy to copy and paste items between the two different registries.



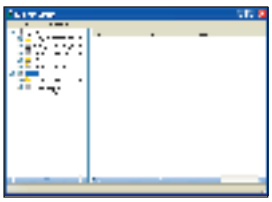
Disconnecting from a remote registry is a similar process to connecting to one: choose Disconnect Network Registry from the File Menu; now select the name of the computer you want to disconnect from and click OK.



1 Press Start > Run and enter 'regedit' into the Open field. Click OK to open the Registry Editor. You now need to instruct Regedit to open a remote registry, rather than using the local one. Choose File and Connect Remote Registry.



2 In the Select Computer dialogue, you need to enter the name of the computer that you want to connect to. If you are unsure of this, click Locations and browse to the PC concerned. Once you have the right name, click OK.



3 The remote PC appears in the left-hand pane of Regedit, below My Computer. This enables you to edit HKEY_LOCAL_MACHINE and HKEY_USERS of the remote PC as well as the local registry. Edit these in the usual way.

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Remote 9x

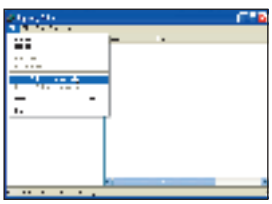
Machines running Windows 98 or Me will need to be set up for remote registry editing

You can remotely edit the registries of PCs running Windows 9x on your network from your Windows XP PC, but you must install this facility beforehand. To do this, insert your Windows 98 CD and be ready to browse to D:\tools\reskit\netadmin\remotreg\regsrv.inf. Windows Me users will need to borrow a Windows 98 CD, because the remote registry tool isn't available on the Windows Me disc, but the Windows 98 version works fine under Windows Me. Once you have installed the Microsoft Remote Registry service and restarted your PC, you may need to make a couple of tweaks before you can access the registry remotely.

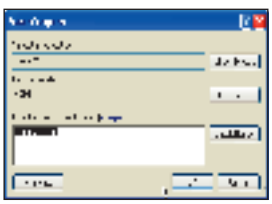
If your Windows 9x PC is set up to use share-level access control, you may need to change this to user-level access control. To do this, open the network applet in Control Panel and switch to the Access Control tab; choose the relevant radio button and click OK. Restart your PC. You may also need to restore any shared drives or folders on the PC after you change the access control setting.



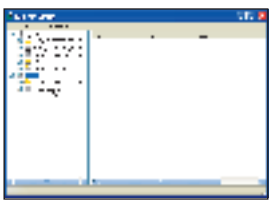
Remote registry editing was developed for system administrators to edit different registries without having to walk to each machine. Mixed networks with machines running different versions of Windows necessitates the installation of the Microsoft Remote Registry on Windows 9x computers.



1 Insert your Windows 98 CD into its drive. Select Start > Settings > Control Panel and double-click the Network applet. On the Configuration tab, click Add. You now need to select a component type. Choose Service and press the Add button again.



2 You are presented with a list of services, none of which you need. To add a different service, click Have Disk. This enables you to browse your Windows 98 CD for the remote registry service, which you'll find at D:\tools\reskit\netadmin\remotreg\regsrv.inf.



3 With the right file selected, click OK. The next screen confirms that you've selected Microsoft Remote Registry. Click OK. You may need to point Windows to the CD for the files to copy over. Restart your PC to finish.



Once you have enabled remote registry editing, connecting to a Windows 9x remote registry is much the same as connecting to another Windows XP machine. Follow the procedure shown on page 56.

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Ownership

Assign the ownership of registry keys to different users



The more complex your system of ownership and permissions is, the harder it is to manage. It's easy to lose track of who owns what, especially when you consider the effect on subkeys of changing ownership of the parent key. Proceed with caution or not at all.

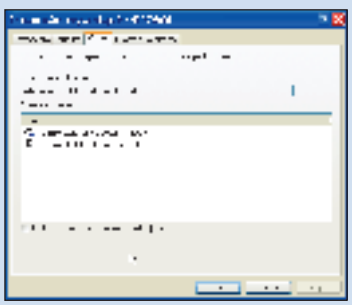
The idea of ownership is simple in the real world: you own your possessions; anyone trying to take them is stealing. In the PC world, Windows XP enables you to assign ownership of a desktop and specific files to each user set up on the PC. This enables them to personalise their desktops and manage their own files without encroaching on other people's space. Regedit enables you to assign ownership of registry keys.

The owner of a key can perform any of the tasks that someone with administrator privileges can. However, these only extend to the keys to which that user has ownership. Keys can have multiple owners, each of whom can make alterations if they so wish. This can get quite confusing, especially if you need to keep track of the state of each of your registry keys. However there are times when you may want to share administration in a limited way. Giving another user ownership of part of the registry makes this possible, while you retain control over the rest of it.

Ownership Deal

How to change a key's ownership

To set ownership of a key, launch the Registry Editor in the usual way and browse to the key. Consider adding it to your Favorites so you can get back to this key easily (see page 52 for details). Right-click the key and choose Permissions. Open the Advanced Security Settings dialogue by pressing the Advanced button. Change to the Owner tab; you'll see a list of users set up on this PC. Select the owner(s) you want from the user list. Check Replace owner on sub-containers and objects if you want this owner to apply to all subkeys within this key. Click OK to confirm the action.



View the Owner tab of the Advanced Security Settings dialogue to see who has ownership of this key.

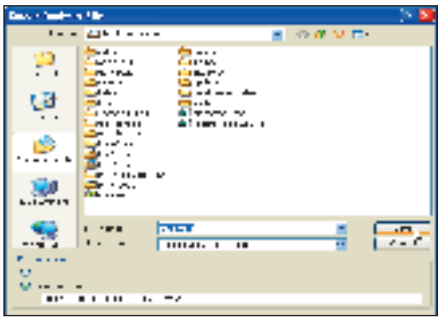
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Regedit Tips

A collection of useful hints and tips that will make for happier registry editing

As you settle into your registry editing, you'll soon start looking for safe shortcuts to take. No one wants to risk damaging the registry, but equally, going the long way round every time can also be rather tiresome.

You should back up the registry every time you contemplate editing it. However, if your last backup was only taken very recently, consider just backing up the hive, or even just the key you will be working on. Use Favorites to move quickly to popular keys to save you a lot of bother navigating up and down branches. On your return, try the keyboard shortcut for closing branches and subkeys.



You can get away with just backing up the key you're editing if you have a registry backup.



Take care when restoring registry files: the Registry Editor doesn't check whether a hive being restored is the same one as the one it replaces. If you overwrite the wrong part of the registry you could do lots of damage.

- **Back up** the key you are editing before you make any changes to it. Browse to the key in Regedit and select it. Now Choose File > Export, enter a descriptive filename and choose Selected Branch.
- **When saving** registry objects, ensure that you give them a suitable filename – this might include what the object is and when you saved it.
- **Use Favorites** to help you find your way around the registry quickly. Give your Favorites descriptive names so you will quickly know which one takes you where in the registry.
- **Try not** to exceed 20 Favorites; if you go beyond this number, it will soon become quicker to browse to the keys manually.
- **Avoid printing** large chunks of the registry because you will run out of time and paper. Instead, use the export feature to save the desired part as a text file, which you can open and edit in a word processor.



To quickly return to the registry root without having to close a lot of minus signs, hold down [Shift] and press the left arrow key repeatedly. Each stroke closes a key and moves you up a level in the registry.

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Cleaning Up

Just like your home, the registry needs a good clean-up from time to time

Microsoft Windows xp

Yes you can…

- Remove unnecessary registry entries
- Use RegClean to automatically clean the registry
- Clean up with EasyCleaner and CleanReg

Project time…

50 mins

More Info



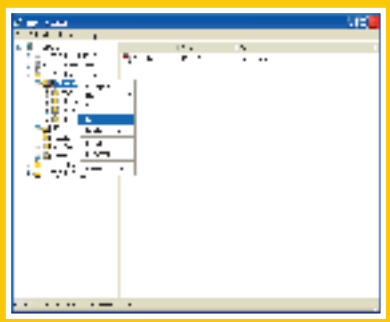
www.toniarts.com/ecleane.htm

The registry holds many settings and configurations and it changes every time you use your computer. So it's not surprising that you end up with a few surplus entries here or there.

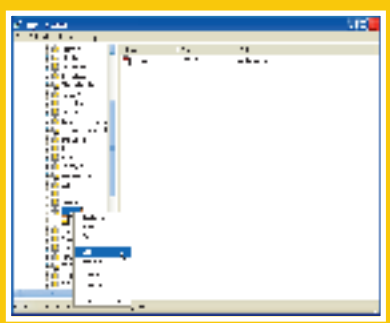
Registry bloat is a serious problem. As you add and remove items of hardware and software, the messy remains stay behind in the registry, making it put on more and more weight. Soon the excess entries begin to drag performance down. If you have items in your registry that refer to missing files, errors happen. This slows things down. As the registry is constantly being referred to, having a large number of unnecessary items means that Windows XP wastes time looking at them. This is why the occasional registry clean-up session is a very good idea.

Taking Care

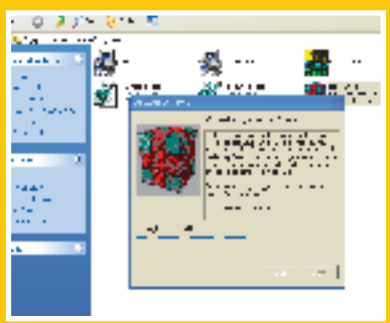
Cleaning up the registry involves identifying unnecessary keys and value entries and deleting them. It's vital that you remember to do your customary backups before a clean-up because you



Page 62 Take necessary precautions to ensure you don't clean up too vigorously



Page 63 Clear up uninstalled programs that have left registry entries behind them



Page 66 Use RegClean to clear up unnecessary registry entries

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Microsoft Windows xp

can't always be confident that every item you delete is surplus to requirements. Deleting an important key can cause you many headaches.

Once you've taken all sensible precautions, you can dive in with Regedit, deleting keys from programs that you've uninstalled and those that relate to hardware devices that are no longer connected to your PC. It pays to look at the context of the key, which hive it is in and where it occurs in the hive to help you decide whether to remove it or not. Clever use of the Find Next utility can help you root out entries referring to particular programs or devices.

Automation

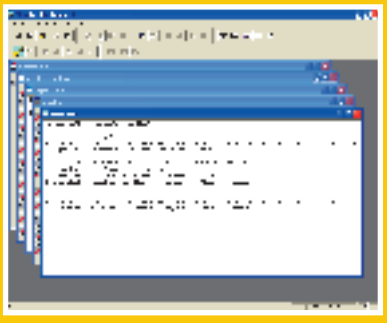
Cleaning up by manual editing can be a little hairy. You have to be pretty confident in what you're doing. For those who prefer a little certainty in life, there are plenty of registry cleaning programs available, some of which are free. These take the strain out of cleaning up, but they aren't always the most efficient way to do it. It pays to run whichever program you choose a couple of times to mop up as many rogue entries as you can. Consider using two different cleaning programs, such as RegClean and EasyCleaner, the latter of which is on your cover disc. These work in different ways and so turn up different items for removal.



Page 67 Get EasyCleaner to find duplicate files and remove them



Page 68 Remove excess registry entries with EasyCleaner



Page 69 CleanReg looks at the registry and finds references to missing files

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Cleaning Precautions

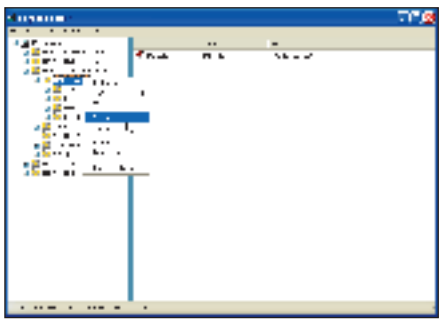
Protect your registry against over-enthusiastic cleaning



Embarking on a clean-up session without a suitable backup is just asking for trouble. Consider taking a full registry backup and burning it to CD. That way you can't damage the backup however brutal your cleaning gets.

Over time the registry picks up new branches, keys and value entries. Every time you install a new program, it makes new registry keys and value entries. Installing hardware also creates entries in the registry. When you later remove these items rarely is everything that was added to the registry taken away, so clutter tends to accumulate.

Too much registry clutter drags performance down, so a clean-up from time to time is a good idea. However, you do need to be properly prepared. Now more than any other time, you need a full registry backup and a strategy that will minimise potential damage.



To delete or not to delete? That's a very important question.



Using a drive-cloning utility such as Norton Ghost or Powerquest Drive Image may provide you with a speedier way to recover from a cleaning mistake. It's easier to restore a full drive than it is to recover registry fragments.

- **It's doubly** important to back up the registry before a cleaning session, because you will be deleting a large number of registry objects. It's all too easy to accidentally snip the wrong thing.
- **The purpose** of cleaning the registry is to control its size and to make your PC more responsive. It's better to have a slightly slower system than it is to have one that doesn't work at all. Always err on the side of caution.
- **If in** doubt whether to cut a particular key or value entry, let it be. Only delete items that you are absolutely certain should be cut from the registry.
- **Consider using** a registry cleaning program rather than editing the registry manually. You're less likely to remove vital components this way.
- **Consider working** on one key at a time, backing it up before you work and testing it thoroughly after your editing.

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Uninstalled Programs

Clearing up after sloppy uninstalls can provide plenty of registry space

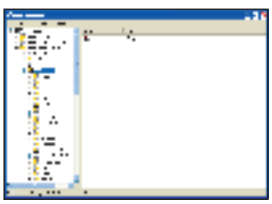
Uninstall routines often leave files and folders in the Program Files folder and entries in the registry, so a bit of registry investigation can pay dividends. Most of your investigations will centre around HKEY_LOCAL_MACHINE/Software, as this is the main place that accrues entries for programs installed on your PC.

Remember that entries are hierarchical, with keys for software houses having subkeys for their programs, or for groups of their programs. For example, the entry for Microsoft Word 2002 when installed as part of Office XP is at HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Office\10.0\Word. The Word key contains a number of subkeys too – there's complexity to software registry entries.

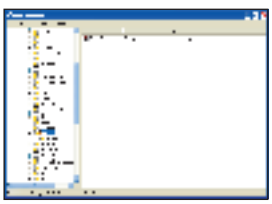
Microsoft applications tend to be very good about clearing up after themselves when you uninstall them, so you're unlikely to need to delete Microsoft Office keys. Bear in mind what a key may contain within subkeys and exercise caution.



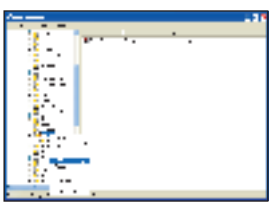
The registry isn't the only place that collects odds and ends from redundant programs. You may well find a folder and files for a removed application in the Program Files folder. Make some more space by deleting them.



1 Once you've uninstalled a program, its registry entries will probably remain. You can free up some space by deleting them. Choose Start > Run and type 'regedit' into the open bar. Expand HKEY_LOCAL_MACHINE and open the software branch.



2 The software branch holds lots of entries. Scroll down them until you find the software that you uninstalled. Remember that you may need to open up a key for the software house concerned before you'll see the program entries.



3 Select the key that you want to remove and right-click it to get a context-sensitive menu. Choose Delete and confirm this action by clicking OK. Repeat this for each uninstalled program that you can find.



Always check the contents of subkeys before deleting a key. You may have other programs from the same software house installed. If you delete all registry entries from a particular software developer, any remaining programs from there may not function properly.

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Simple Deletion

The simplest way to lighten the registry's load is to delete what's no longer required



Using the Find Next utility only identifies the items that match your search criteria. You will have to examine the context of the identified objects carefully to decide if they are safe to delete.

The most thorough method of registry cleaning is to manually go through each hive, carefully removing components that are no longer needed. However this is a huge job and most people simply don't have the time or patience to follow it through.

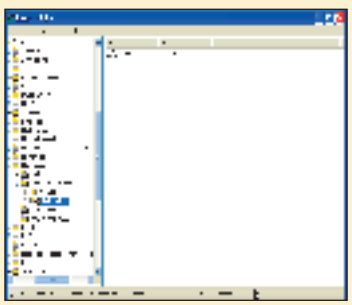
But you can still go through the registry, culling unnecessary bits, by making good use of the Find Next Utility. To save you going through everything with a fine-toothed comb, get Regedit to look for you. Start by opening up the Registry Editor and Select My Computer. Choose Find from the Edit Menu to launch the Find Next dialogue. Now enter a string of characters that relate to the item of hardware or software that was recently removed. Ensure that the 'Match whole string only' option is not selected, because you'll want to see items that may differ a little from your string.

Click Find Next to jump to the next entry matching your criteria. Repeat until you've covered the whole registry. Then you can delete the superfluous entries.

To Snip or Not To Snip?

Heed your inner voice of caution if in doubt

One part of the registry looks pretty much the same as any other, so how can you tell if the object that you're looking at is safe to delete? Some people choose to trust in the force and delete it anyway, but these are the sorts who later need to reinstall Windows because their PCs have stopped working properly. Clearly there are better methods. One is to browse upwards and downwards in the registry to see the object in context. Another is to look at the status bar, to see the object's name and location, which will help inform you whether it's safe to delete or not.



Check the status bar to see the full name and location of the currently selected object.

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RegClean

Use this cunning little utility to automate registry-cleaning tasks

Manual registry cleaning is a fiddle: it's not easy to know for sure which items to keep and which to delete. In fact, this is the sort of repetitive, fastidious task that is suited to automation.

RegClean is a Microsoft program that is no longer supported by Microsoft, but that is still widely available. It wasn't possible to put RegClean on our CD but it is a very small download. You'll find it by doing a Google search or by visiting a popular download site. For example, visit www.download.com and search for it there. You'll be provided with download instructions from there.

Although RegClean is thought to be compatible with Windows XP, it is no longer released or supported by Microsoft. This may mean that there are undocumented problems with the utility. However, plenty of people have used it to keep their registries in shape, and no specific problems are known. You use this program at your own risk, but many have done so before you without experiencing any problems.

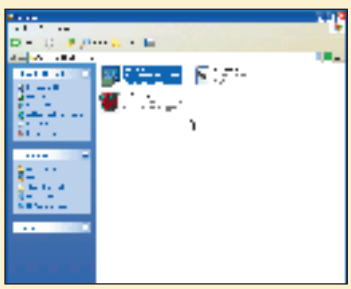


If you get an error message when using RegClean, you may need to update the OLEAUT32.dll file. You can do this easily by launching the executable file OADIST.exe, which will update your system.

Installing RegClean

Don't let two different regclean.exe files fox you

When you download RegClean 4.1a, you save a file called regclean.exe onto your hard drive. This is a self-extracting zip file. When you launch it, you need to provide a folder to extract the contents to. Choose a different folder to the current one. The zip file contains a different regclean.exe file. If you extract it to the current folder the new file will attempt to overwrite the zip file. In the new folder, you get regclean.exe, a readme text file and OADIST.exe. You may need to install the latter file is RegClean doesn't run properly.



You may need to install OADIST.exe after extracting RegClean.exe.

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Using RegClean

Get RegClean to clean up the registry and fix errors for you



RegClean will make changes to your registry. You can undo them, but only if Windows XP works properly after the change. A registry backup and a restore point set before you run the program would be a good idea.

RegClean is probably the simplest registry program to use. You launch the program and it runs without your supplying any configuration details at all. It scans your registry for unnecessary entries and other simple errors. Practically all registries, even the best-tended ones, contain minor errors, so it's highly unlikely that this scan won't come up with anything at all. If it does come up clean, you simply quit the program. In the more likely case that the scan has turned up errors, you won't see what these are, but you'll be given the opportunity to get them fixed. Clicking Fix Errors makes RegClean go through and fix each of the errors that it turned up. It also creates an undo file, named [undo] [computer] [date] [time].reg, where [computer] is your computer name. The square brackets don't appear in the filename. This file appears in the same folder as RegClean.

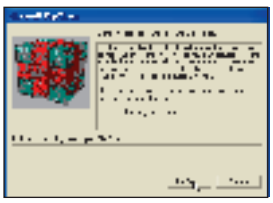
To undo any of the changes that RegClean has made, just launch the undo file and the errors are restored to the registry.



Try running RegClean again after you've corrected the errors it found. It will probably find more errors. This is why it's useful to run more than one registry cleaning application, to pick up as many problems you can.



1 Double-click the regclean.exe file that you previously extracted from the downloaded regclean.exe file. This launches the program. It immediately starts examining the registry for problems and surplus objects.



2 If RegClean finds no errors (unlikely), click Exit to close the program. Otherwise click Fix Errors. RegClean then fixes the problems and creates an undo registry file, which is saved to the same folder as the regclean.exe file.



3 If your system develops problems as a result of the changes made by RegClean, browse to the folder containing the regclean.exe file. Double-click the undo file, which will be called undo plus your PC name and the date and time. This restores the registry.

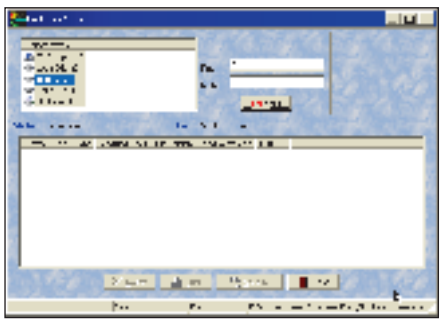
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EasyCleaner

EasyCleaner is the recommended alternative for cleaning up your registry

EasyCleaner is a free registry cleaning program that provides other helpful cleaning functions that will significantly reduce the amount of clutter on your hard drive. It comes with a patch file, XPFixhelp.reg, which stops the program from identifying Windows XP Help and Support files as items for deletion.

Install the program first and then double-click the XPFixhelp.reg file to automatically update the registry. When you first run the program, you'll need to choose a language.



EasyCleaner can scan your system for duplicate files and help you to remove them.

EasyCleaner provides a clear and simple interface. Choose from the main cleaning options and follow the wizard-like instructions.

You'll find a copy of EasyCleaner on the cover disc, as well as the file XPFixhelp which fixes a bug that returns help files as items for removal. You can also get these items from the Toni Arts website as a free download.

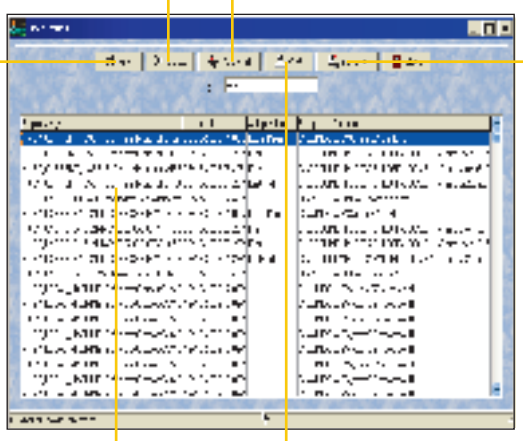
www.toniarts.com/ecleane.htm

Registry Scan

Delete. Select one or more keys from the list and press this button to delete them.

Find. Press this button to get EasyCleaner to scan the registry and identify potential keys for deletion.

Registry key list. See each key identified here, along with its data type and file reference on your PC.



Select All. This button selects all the keys that EasyCleaner has discovered, enabling you to delete them all at once.

Save List. Click this to save the list to a text file for editing in a word processor.

Print. Press here to produce a full print-out of the registry keys that EasyCleaner has identified for deletion.

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Using EasyCleaner

EasyCleaner will take the strain out of your registry tidying



www.toniarts.com/dwnloads.htm

We've provided EasyCleaner and its patch file on the disc, but you can also download it from the link provided. It's worth checking here in case a new version of the program has been released recently.

Now you know a little bit about the EasyCleaner interface, it's time to use the program to clean up your registry. Once it is properly installed and run and you've chosen your preferred language, you're presented with a number of cleaning options. The first is cleaning the registry. You can see how to do this in the walkthrough.

The second option is to search for duplicate files. These may be anywhere on your hard drive. Select the drive(s) you want to scan and EasyCleaner will search for identical files. You have the opportunity to delete one or more of the duplicates.

The third option is to search your system for unnecessary files. These may relate to software or hardware that no longer exists on your PC. The Start Menu option scans for shortcuts on the Menu that don't link to an installed program. You are presented with each item and given the chance to delete it.

The Space Usage feature plots pie charts of hard drive space, which will enable you to see the effects of your cleaning.



EasyCleaner doesn't just clear out the registry: you can set it up to scan your hard drive for duplicate and unnecessary files. This could provide you with lots more space on your hard drive .



1 Install EasyCleaner. You also need to install the patch XPFixhelp to ensure that you don't delete the help files. The first time you run the program, you'll need to select your language. Now click Clean Registry.



2 On the following screen, click Find and Easy Cleaner will look for redundant registry entries. You'll see a growing list of registry entries that are duplicates, or that relate to programs and files that have since been removed.



3 You'll now have a list of registry keys that you can delete. Click on a key and choose Delete to remove it. Clicking Select All before Delete speeds up the process, but use this with caution: you could end up removing more than you bargained for.

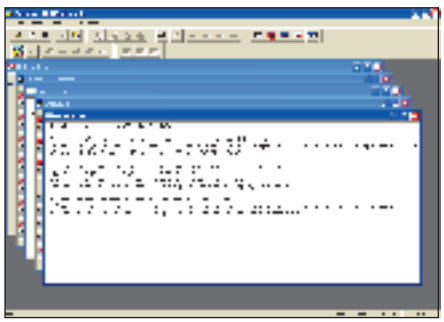
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CleanReg

This shareware program scans the registry, providing a full report

CleanReg3 is a shareware application that takes a slightly different approach to cleaning the registry. It searches the registry for file paths and then your hard drive to see if these files still exist. The results of this scan are reported in a series of windows.

You get bad file paths reported, along with hidden items, all registry files and a report of all keys, including reference to missing files. By pressing the CleanReg button, which has a mop icon on it and is located on one of the toolbars on the top left, you can delete all the keys that reference missing files at a single stroke. Undo information is stored for you.



CleanReg checks for files that are referred to in the registry but that no longer exist.



CleanReg is available from Armstrong's Systems, which you can find by following the link shown here. It has also been included on your cover CD. The trial version is limited, but available for free. Registration removes the limitations and costs $29.92 (around £18).

www.cleanreg.com



CleanReg defines a missing file as one referenced in the registry which doesn't match a file path on your hard drive. It aims to remove keys that relate to missing files.

- **The Files** window displays all the files that are referred to in the registry. You see the files and their full paths on the left-hand side. To the right of these are the key names that reference these files.
- **The Registry** window shows all the registry keys and values in tree view, similar to the Windows Explorer interface.
- **CleanReg shows** all the files referenced but not found. The upper pane shows the files named. The lower pane shows the registry keys and where the files are referenced in the registry.
- **The hidden** window shows all the files and registry keys excluded from the CleanReg window. You may also see a BadPath text window, listing bad file paths.
- **The Undo** window lists the values of registry keys that are changed by CleanReg. You can save this as a .reg file which you can import into the Registry Editor if you need to undo any of the editing that has been done by CleanReg.

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Chapter 7

Speedy Tweaks

We show you how to make your PC faster with the help of some cunning registry editing

Microsoft Windows xp

Yes you can…

- Find and remove spyware from the registry
- Get rid of unnecessary startup programs
- Make several speed-enhancing tweaks

Project time…

40 mins

More Info



www.winguides.com/registry/

A number of factors come into play when you consider the speed of PCs. Firstly, the specification of the hardware plays a big part. Faster processors can handle more instructions within a given time than slower rated ones. The amount of RAM you have installed also affects speed. If your computer has to use virtual memory much of the time, lots of data will be passed to and from the hard drive, dragging performance down. The speed of your hard drive will also play a part in the equation.

Unless you have the time and money to upgrade your PC, there isn't a lot you can do about its specification. However, hardware is only one part of the speed issue. The number of background processes has a big bearing on system speed, as does the effects of spyware or Trojans lurking on your hard drive. How fragmented your data is will also directly affect your PC's speed.

Spyware

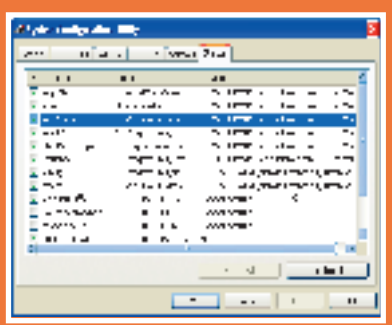
Thankfully, there are things you can do to eliminate, or at least seriously reduce, these software effects on system speed. Much of this can be achieved by editing



Page 72 Uninstall old programs and their associated registry entries



Page 73 Scan for and remove spyware from the registry and elsewhere



Page 74 Remove unnecessary entries from the Run key

CFG10.chp_07 9/12/2003 3:32 PM Page 71

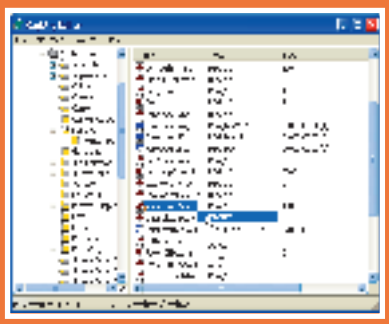
Microsoft Windows xp

the registry. You can minimise the amount of data fragmentation with a registry edit or optimise your hard drive every time your computer boots up, so that it's never a long task. To stop spyware and Trojans in their tracks, search the registry for likely suspects fingered on Symantec's Security Response site. For an even easier life, use the free spyware detecting program, Ad-aware 6.

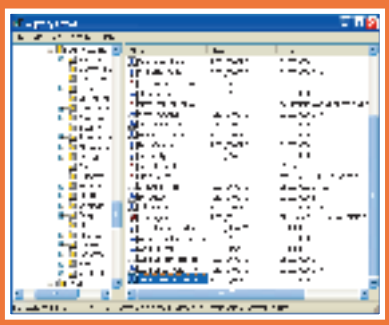
Background processes aren't always necessary, but many start up at the same time as Windows, taking up RAM and processing power. Many of these are triggered in the registry; you can reclaim that precious processing power by deleting the relevant value entries.

Interface

If some items in Windows XP are still a little too slow for your taste, there are ways to speed them up. You can reduce the delay after you first click the Start Menu to make menus respond to you as quickly as you like. Disabling AutoRun for CDs and DVDs will stop Windows XP trying to read the disc until you want it to. You can further speed up the interface by removing all animations, if every second counts for you.



Page 75 Speed up your Start Menu with a nifty registry tweak



Page 78 Increase simultaneous downloads in Internet Explorer



Page 79 Optimise your hard drive when you boot up your PC

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Slimlining

A slimline registry is a faster registry – here's how to lose unnecessary entries



www.symantec.com/sabu/sysworks/basic/

Running Norton SystemWorks 2004 is like getting a quick check and brush up for your PC. It corrects a large number of registry errors without you having to lift a finger and it includes a wide rage of other handy utilities. Check out the link to find out more.

The Registry holds a number of keys that can affect your PC's performance. Many offer a chance to tweak settings, enabling you to trade off features against speed. Fancy effects and animations take their toll on processing speed but it isn't only in turning off these that you can improve the performance of your PC – having a tidy and ordered computer also improves its responsiveness.

As we saw in the last chapter, cleaning out registry clutter not only makes editing the registry much easier, because you don't have to work your way through clutter, it also speeds up its performance. See below for some slimlining tips.



Uninstall programs using Add or Remove Programs; don't just delete the files.



It's an obvious point, but one overlooked by many: uninstall programs using Add or Remove Programs in Control Panel. This ensures that you use the correct uninstall utility and don't just delete the program files. Uninstalling removes most registry entries associated with the program in question.

- **Regularly use** a registry cleaning program to mop up unnecessary registry entries. Turn back to Chapter 6 to see examples of these programs at work.
- **Use a** utilities program to examine the registry and correct problem entries. Norton Utilities, which also comes as part of Norton SystemWorks 2004, is a good registry utilities program.
- **Check shortcuts** on your desktop and Start Menu. If any don't work, delete them. It is possible to edit a shortcut that points to the wrong place, but it's easier to create them from scratch.
- **Remove any** orphan registry entries by searching for those that relate to uninstalled programs and hardware, or by running an application like RegClean. See Chapter 6 for more details.
- **Uninstall programs** using the correct uninstall routine, which you'll find either grouped with the program's Start Menu entry or in Add or Remove Programs, in Control Panel.

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Spyware

Spyware can create registry entries and report back on your computing activities

Spyware is bad news. It is used to gather information about you and your PC. You can pick up spyware by browsing to a website that places a tracking cookie on your system. This logs information and is available to examine the next time you visit the site. Apart from the violation of your privacy, this doesn't prove too much of a drag on your system.

However, install a program that appears to have an innocent function and you might be installing more than you bargained for. Many programs, particularly games, contain elements of spyware. These do drag system performance down because they run as background processes, collecting personal information and logging your activity. When they transmit their findings via the internet, your net connection suffers, because you're sending additional information.

Spyware is often poorly written, which leads to poor use of resources. You can find your RAM tied up, as well as losing CPU time spent processing spyware demands.



Symantec's Security Response site lists all known viruses, Trojans and spyware. This is a good place to look if you think you've been infected. Even if your virus checker can't find the bug, you may be able to track a registry element that is diagnostic of the infection.

http://securityresponse.symantec.com

Banish Spyware

Get rid of it the easy way

You can search your registry for spyware entries using the Find Next utility in Regedit, as long as you know what you're looking for. An altogether more pleasant option is to download the free version of Ad-aware from Lavasoft, which you can find on the link below. This clever application scans the registry for known spyware and enables you to delete each entry at a stroke. It also scans Internet Explorer for tracking cookies. Updates are regularly posted and can be installed in a similar way to updates to your virus checker.



Ad-aware scans your registry for spyware, a little like a virus checker.

www.lavasoft.nu

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Run Entries

Value entries in the Run key launch programs on start up



You won't find every startup entry in the Run key. To get a full list of startup programs, you'll need to launch the System Configuration Utility, MSConfig. This enables you to temporarily turn off startup entries to see if everything works fine without them.

Most Microsoft Windows XP users know that any shortcut dragged into the Startup folder on the Start Menu will start with Windows. However this isn't the only way to trigger startup items. Most applications that need to run in the background all the time enter the startup list by adding a value entry into the right registry key. This is in the Software branch of HKEY_LOCAL_MACHINE. Browsing to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Run will give you an overview of each of the startup entries triggered by the registry. By deleting any one of these you stop the application linked to it from starting with Windows. You may want to do this because background processes can cause performance to drag. Many applications add themselves to startup without asking and may not need to run constantly in the background. By taking control of your startup entries you liberate processing power and RAM to spend on other processes, like the programs you are running.



To launch MSConfig, choose Start > Run and enter msconfig in the open bar. Click OK and choose Selective Startup on the General tab. Switch to the Startup tab and clear the tick boxes next to any entry you want to disable.



1 To see which startup items you have, launch the System Configuration Utility. Choose Start > Run and type 'msconfig' into the Open bar. Click OK. Change to the Startup tab, which shows start up items and where they are launched from.



2 Each utility that is launched at the same time as Windows can drag performance down. Removing unnecessary ones speeds Windows up. Select an item that is launched from the registry and note it down. Close MSConfig.



3 Launch Regedit in the usual way. Browse to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Run. Now select the item that you want to remove, right-click it and choose Delete. Repeat for any others.

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Menu Delay

Remove the lag between clicking on the Start button and the Start Menu appearing

When you're looking for ways to save time, every second counts – in fact, every fraction of a second counts because all these delays add up. When you click the Start button, there is a short delay before the Start Menu appears. This delay is the same when you expand new parts of the menu. It may only be a short delay, but it's possible to make it even shorter with a nifty little registry tweak.

Getting the optimum time for the delay is a little tricky, because you need to factor in your own reaction time. If the menus open too quickly, you won't find choosing options easy. As you roll over an expanding menu, it will open instead of enabling you to move over to a different option. Setting too short a delay could get you into more of a mess than leaving things the way they are.

Try reducing the delay by a small amount and opening a few menus. Reduce the rate further if necessary. Use trial and error to find the time interval that suits you best.

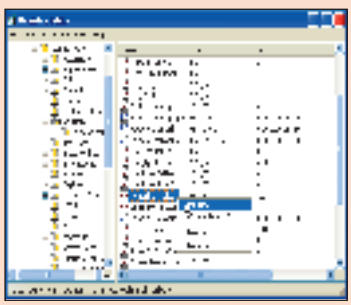


More experienced users of Windows XP can probably afford to shorten the menu show delay to a greater degree than relative newcomers. This is because old hands will know their way around.

Faster Menus

Change the menu show delay for marginally quicker access

Choose Start > Run and enter 'regedit' into the box marked Open. Press OK. For a change, we're not editing the HKEY_LOCAL_MACHINE hive. Instead, expand HKEY_CURRENT_USER to display the following key: HKEY_CURRENT_USER\Control Panel\Desktop. Select the MenuShowDelay value entry, right-click it and select Modify from the drop-down menu. In the edit string dialogue, alter the number 400 to a lower number – you can drop the number to half its value or lower it gradually. Click OK. Close the Registry Editor and test the menu timing. Adjust further according to your taste.



The default value for MenuShowDelay is 400, but you can shorten this or lengthen it as you wish.

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CD Autorun

The automatic launching of CDs can slow things down. Time to stop it



You might consider setting HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Cdrom as one of your Regedit Favorites. If you need to swap between having AutoRun on or off, this will save you some precious time.

When you insert a CD or DVD into the appropriate drive, Windows XP spins the disc up to speed and either starts the appropriate program or it presents you with a number of options. The time it takes to spin up to speed can be a number of seconds, depending on the speed of your CD or DVD drive. Often you can't perform other tasks during this time, or you carry a slight performance drag. When you just want to browse the disc, this can be most annoying.

Some simple registry editing can come to the rescue here. You can switch AutoRun off completely. If you need to restore it again, you need only reverse your edit. To temporarily disable AutoRun for one CD only, hold down [Shift] as you insert the disc. You won't feel the benefit of increased speed if you choose this method though, because the disc will start to spin anyway.

If you're not going to play a lot of audio CDs, or videos on CD or DVD, it's probably best if you do the registry edit.



DWORD values tend to carry simple numerical data. This may be entered in decimal or hexadecimal form. Many DWORD values use one or zero to turn a setting on or off.



1 Launch the Registry Editor by selecting Start > Run and typing 'regedit' into the open bar. Follow this by clicking OK. Expand the HKEY_LOCAL_MACHINE hive and the System branch. Now open up CurrentControlSet and Services.



2 Expand the registry tree to view the following key: HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Cdrom. You'll see a number of value entries that alter different aspects of the CD ROM drive interface. Select the AutoRun DWORD value.



3 Right-click this value and select Modify. In the resulting Edit DWORD Value dialogue, change the value one to zero. Click OK and close Regedit. If you need to restore AutoRun, change this value back to one.

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Animated Menus

Improve speed by removing animations and reducing timeouts

Many of the animations that make Windows XP look so cool do so at the expense of processor power. This isn't generally an issue because the difference is probably only a fraction of a second, but if you have a low specification PC, or you're just keen on saving time, you can free up some resources by disabling menu animations.

Choose Start > Run and enter Regedit in the normal manner. Expand HKEY_CURRENT_USER to show the following key: HKEY_CURRENT_USER\Control Panel\Desktop. Now choose New > String Value from the Edit Menu. Right-click this new value and select Rename. Call it MinAnimate, remembering that this is case-sensitive. Right-click the new MinAnimate string value again, only this time choose Modify. Check that the value is zero (the number, not the word). Click OK.

Test a few menus to see if the animation has been successfully turned off. If it hasn't, try rebooting, as this will ensure that the new registry settings are used.

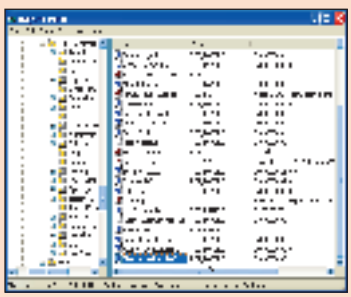


You can turn off all visual effects using the System Properties dialogue. Click Start and right-click My Computer, choosing Properties. Choose the Advanced tab and click Settings under Performance. Select Adjust for best performance and click OK twice.

Hung Programs

Don't wait for a non-responding program to be diagnosed

Some applications recover from an apparently hung state, but most need to be restarted. This is why you get the unresponsive program dialogue. This dialogue is triggered after Windows XP hasn't received a response within a given time. You can shorten this time, but be wary of making it too short, because you may end up with working programs being incorrectly reported as hung. Open Regedit and browse to HKEY_CURRENT_USER\Control Panel\Desktop. Double-click the string value HungAppTimeout and reduce the default 5000 entry to a lower number.



Adjust the HungAppTimeout string to a lower value so that Windows reports unresponsive programs quicker.

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Max Connections

Make the most of your internet connection by downloading several files at once

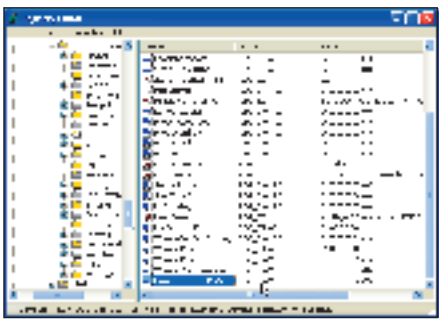


www.speedbit.com

If you regularly download a lot of files from the internet, consider a download manager, which resumes broken downloads. Download Accelerator Plus, from Speedbit is available for download from the link shown. DAP Basic, the free version carries adverts.

The amount of stuff that people download from the internet is increasing, whether or not you have a broadband connection. No amount of registry editing will improve the bandwidth of your connection, but you can make better use of what you have. By default, Internet Explorer permits two simultaneous downloads but if you increase this amount, you can set up several downloads at once.

This doesn't speed up your downloads. In fact, having more simultaneous ones makes each individual download a lot slower, but you reduce the amount you have to interact with Internet Explorer, which saves time and effort.



Make two new value entries to increase the number of simultaneous downloads.



Avoid other internet activity like viewing newsgroups, browsing the web or sending and receiving email during a download. Multi-tasking like this on a dial-up connection will slow everything down.

- **To increase** the number of downloads you can make from a website, open Regedit in the usual way and browse to HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Internet Settings.
- **Create two** DWORD values, unless they already exist. If you can't find MaxConnectionsPerServer and MaxConnectionsPer1_0 Server, select Edit > New DWORD value. Do this twice and give the new values the previously mentioned names.
- **By default** the MaxConnectionsPerServer value is set to two. Increasing it to three gives you one more download.
- **MaxConnections** Per1_0 Server defaults to four, giving you a maximum of four simultaneous downloads from multiple sites.
- **The previous** edits can affect the stability of the HTTP protocol. Be prepared to switch the entries back to their original settings if your web browser becomes unstable.

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Fragmentation

Reduce fragmentation and optimise your disks when you boot

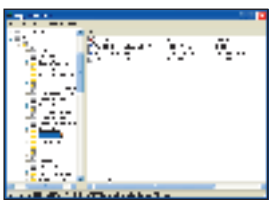
Files on your hard drive become fragmented as your PC slots parts of files in different places to make best use of the available space. As fragmentation increases, your hard drive becomes less efficient and your PC becomes slower and slower. This is why it's a good idea to run Disk Defragmenter from time to time, because it undoes the fragmentation, meaning that your hard disk won't have to dot around trying to assemble each file from its component pieces each time you launch it.

You can't stop data fragmentation happening, but you can reduce its effects. If you use the FAT32 filing system, you can set a minimum size of contiguous free space to use for data storage. In other words, if a gap on the hard disk is too small, Windows XP won't try to squeeze a file fragment into it. The larger this space is, the less fragmentation you'll get.

If you use the NTFS filing system, which is most common, don't try this tweak. Set your drive for optimising at boot time instead.



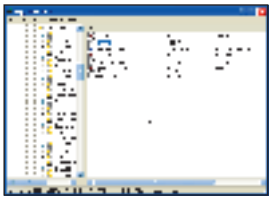
Unless you have a good reason to be using FAT32, like you need Windows 9x PCs on your network to have access to your files, you may be best off converting your drives to the NTFS system. It's faster, more efficient and more stable.



1 If you are using the FAT32 filing system on your hard drive, you can set a minimum size for contiguous disk space. Do this by opening Regedit and browsing to this key: HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\FileSystem.



2 Create a DWORD value called ContigFileAllocSize if it doesn't already exist. The value is the size of the space in K. Larger values mean less fragmentation but less efficient storage. Experiment with different values to see what works best for you.



3 Whichever filing system you use, Windows XP can optimise your disks upon boot, if the feature is enabled. Examine the key HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Dfrg\BootOptimizeFunction. Look for the String value named Enable. If this exists and is set to Y, then the feature is enabled.



To convert your hard drive to NTFS from FAT32, click Start > Run and type 'cmd' into the open bar. Type convert [drive letter] /fs:ntfs and press enter. That is, to convert drive D: to NTFS, you would type convert d: /fs:ntfs. Back up your data before converting your drive.

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Cool Edits

Have a little fun with some registry tweaks that will further improve your Microsoft Windows XP experience

Microsoft Windows xp

Yes you can...

- Add your own branding to key Windows XP programs
- Put a custom message on the login screen
- Disable balloon hints

Project time...

35 mins

More Info



www.winguides.com/registry/

Learning how to back up the registry is important, as is a basic knowledge of what the different parts of the registry do. Being able to clean up a messy registry is crucial, especially if you like having a computer that doesn't drag its feet. Being able to save time here and there with performance tweaks is great when you're questing for a faster machine. However, none of these activities would probably reach the top of your list of fun things to do.

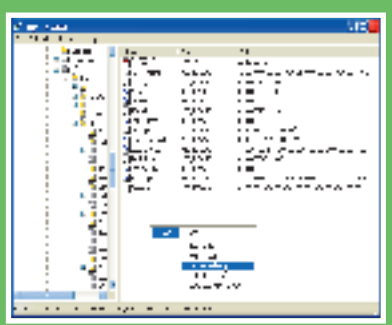
Editing the registry can be fun. There are lots of cunning and innovative tweaks and tucks that you can make which will set your computer apart from others. These do so in a pleasing, low key kind of way. There's nothing stylish and subtle about changing your desktop wallpaper to a picture of your choosing. However, the ability to discreetly add your name to the title bar of Windows Media Player will tantalise and intrigue a computer user of lesser abilities.

Smaller Outlook

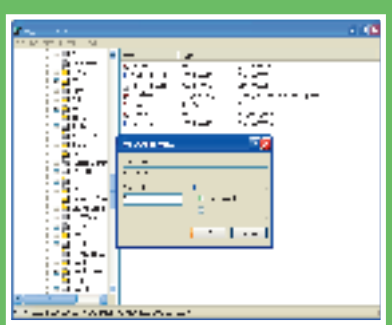
As more and more people turn to email for their primary communication medium, the need to keep email



Page 82 Add your own branding to Windows Media Player's Title Bar



Page 83 Make Outlook minimise to a System Tray icon



Page 84 Gain more control over when Windows Messenger logs you into .NET

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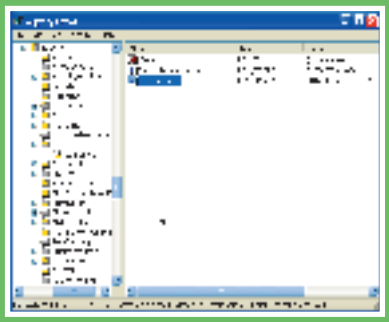
Microsoft Windows xp

applications up and running at all times is pretty common. The only problem is that these programs take up space on the desktop and the taskbar. Being able to minimise Microsoft Outlook to the System Tray is pretty desirable. It continues to run, but the only screen presence it has is a small icon in the bottom right-hand corner. Double-clicking it restores it to full size. We'll show you how to achieve this with a simple registry edit.

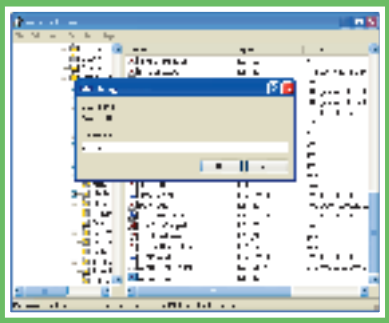
Irritations

While Windows XP is a remarkable operating system, it's inevitable that some people's must-have features are other people's trivial irritations. If you dislike Windows Messenger's habit of signing in whenever you log on, connect to the internet or use Outlook Express, there's an edit that's right up your street. Equally, if those friendly balloon hints really get your goat, we'll point you in the direction of a tweak that will silence them for good.

There are ways to put your name or custom message on the login screen, in place of My Computer or on the title bars of Internet Explorer and Outlook Express. You can easily leave no one in doubt on the ownership of your PC.



Page 85 Change the frequency of the Desktop Cleanup Wizard



Page 88 Add your name to the Internet Explorer Title Bar



Page 89 Put a customised message on the login screen

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Customise Media Player

Use a handy registry edit to stamp your name on your Windows Media Player



What's funny today can quickly become irritating tomorrow. If you want to return Windows Media Player 9 Series back to its original state, enter the registry and find and delete the key HKEY_CURRENT_USER\Software\Policies\Microsoft\Windows MediaPlayer.

Editing the registry isn't all about tidying up and making things work faster. These are important ways of making your PC more productive, but sometimes registry editing can have some fun results. It can enable you to customise your PC – to personalise your applications. Here you'll try adding a personal message to Windows Media Player 9 Series.

Windows Media Player 9 Series provides a number of ways for you to customise it, offering skins and colour changes, but nothing in its user interface enables you to stamp your name on it. However, a simple registry edit will leave you with your chosen text in the title bar.

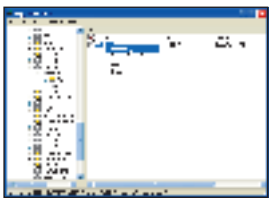
Your message will be prefaced by the words 'Windows Media Player provided by', so your name would fit nicely after it, even if the resulting statement wouldn't strictly be true. Try to think of appropriate text that would complete the sentence in a fun and amusing way. Then follow the steps below to turn your dream of a personalised Media Player on your desktop into a reality.



You don't always see the title bar of Windows Media Player 9 Series. Move the mouse pointer to the top of the window for the title bar to reappear. It doesn't show up at all if you have a skin applied. It's only visible in Full Mode.



1 Open the Registry Editor in the normal way. Expand HKEY_CURRENT_USER until you can see the following key: HKEY_CURRENT_USER\Software\Policies\Microsoft. From the Edit Menu, choose New > Key. Right-click the new key and choose Rename. Give it the following name: WindowsMediaPlayer.



2 Open this new key and create a new string entry by choosing Edit > New > String Entry. Right-click this and choose Rename. Call it TitleBar. Right-click the TitleBar string value and enter the text you want to appear on Windows Media Player 9 Series.



3 Close Regedit and then launch Windows Media Player 9 Series by choosing Start > All Programs > Windows Media Player. Your text will appear in the title bar immediately after 'Windows Media Player provided by…'

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Outlook Tray

Minimise Outlook to the System Tray and keep it running in the background

Anyone who runs a business, or who uses email for work purposes will know how important it is to keep the channel of communication open. People expect fast responses to email. You can't respond quickly if you haven't seen the message yet. This is why many people like to keep their email application open at all times, waiting for incoming mail.

Having to keep an application window open all the time, however, can be a bit of a pain. You need to keep minimising it whenever you need to see the desktop. The keyboard shortcut of pressing the Windows key and [D] together can help you a bit here, but you still end up with a window button on the taskbar to get in your way. Wouldn't it be so much easier if you could simply minimise Outlook to the system tray, thereby leaving you more space on your desktop while it isn't needed? As soon as you receive an email, you'll hear the chime and you'll get an email icon in the system tray. A registry edit makes this possible.

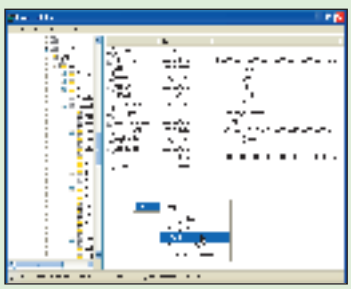


Having Outlook running in the background does use up quite a lot of system resources. If you have a low specification PC, you'll need to consider whether you can afford the overhead of having it running all the time.

Shrink to Fit

How to minimise Outlook 2002 and keep the taskbar clear

Launch the Registry Editor and expand HKEY_CURRENT_USER to the Outlook Preferences key, which is at HKEY_CURRENT_USER\Software\Microsoft\Office\10.0\Outlook\Preferences. You need to create a new DWORD value, so select Edit > New > DWORD value. Right-click the new value and choose Rename. Name it MinToTray. Right-click it again and choose Modify. Set it to 1 to enable minimise to tray. Close Regedit and open Outlook. Press the Outlook taskbar button to minimise it. The application disappears, leaving a small System Tray icon. Double-click this to restore it.



Make the new DWORD value MinToTray in the Preferences key.

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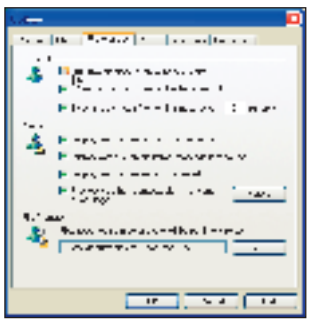
Stop Messenger

Windows Messenger is an embedded part of your desktop. What if you don't want it?

This tweak doesn't disable Windows Messenger completely: it just stops it automatically signing in when you open Outlook Express. It isn't always a good idea for other people to know when you're online and when you aren't.

Windows Messenger was designed to be an integral part of Windows XP. It was to stay on hand at all times enabling you to use your always-on internet connection to its best. The only trouble is some people want to decide when Windows Messenger opens and when it doesn't.

By default, Windows Messenger starts at boot and logs in when you connect to the internet, logging in again when you open Outlook Express. You can discourage this behaviour by selecting an appropriate option in Windows Messenger's Preferences, but to stop it self-starting for good, you will need to apply a registry tweak.



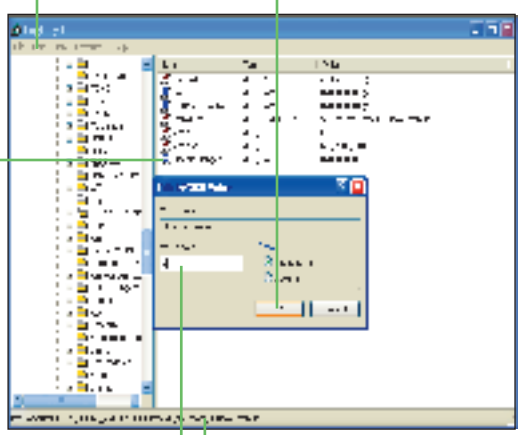
Discourage Windows Messenger from opening when you start up Windows XP.

How to hide Windows Messenger

Once you've launched Regedit and browsed to the right key, select Edit > New > DWORD value.

Right-click the DWORD value and choose Rename. Call it HideMessenger.

Right-click the HideMessenger value and choose Modify. Change the value to two.



Click OK to confirm the change to the value. You can always change it back later.

Use Regedit to browse to this key HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Outlook Express, which is where you can disable Messenger.

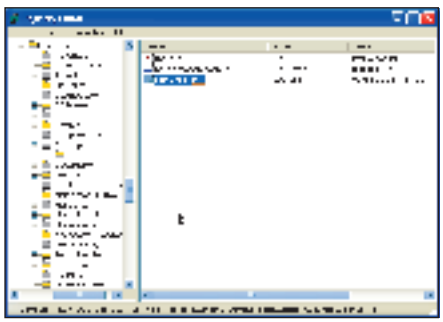
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Desktop Cleanup

Take control of how frequently Windows XP calls in the cleaners

If your desk is untidy, the chances are that your Windows XP desktop will be a mess too. Every so often Windows XP launches the Desktop Clean Up Wizard, which tidies away all your unused shortcuts into a single folder, which then remains on your desktop. It's a similar action to sweeping all your old papers into a big drawer.

Depending on how messy you are, you may want to set the wizard to clean up after you at more frequent intervals than the current default of every 60 days. Equally, if you're fastidiously tidy, the wizard might prove to be an annoyance, in which case, you can set it to run less frequently than the default.



Last used time stores the date when the wizard was last used.



You can restore shortcuts cleared away by the Desktop Cleanup Wizard. Just double-click the folder on your desktop called Unused Desktop Shortcuts. Now click and drag those shortcuts that you want back onto the desktop again.



Quickly make your desktop tidier without losing any of your shortcuts by right-clicking anywhere on the desktop. This calls up a context menu. Choose Arrange Icons By > Name. The shortcuts will snap into line.

- **The Desktop** Cleanup Wizard runs every 60 days by default.
- **To change** the frequency of the wizard, first open the Registry Editor in the usual way.
- **Expand HKEY**_CURRENT_USER to display HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Explorer\Desktop\CleanupWiz. The binary value 'Last used time' stores the date and time the Desktop Cleanup Wizard was last used.
- **The DWORD** value 'Days between clean up' stores the interval between each time the wizard is launched. Right-click this value and choose Modify.
- **In the** resulting dialogue box, you have to change the base from hexadecimal to decimal. Now change the number of days in the interval to the number of days you want to have between cleanups. Finally, close Regedit and then log off and log back in again for the change to take effect.

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Balloon Hints

Tame those speech bubbles once you've heard all they have to say



To minimise the impact of balloon hints, why not change or remove the sound they make? In Control Panel, choose Sounds > Speech and Audio Devices, followed by 'Change the sound scheme'. Scroll down the list of events to System Notification and change Windows XP Balloon.wav to (None). Click OK.

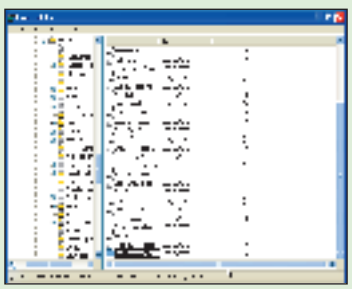
Opinion is divided over the speech bubbles that pop up above the System Tray to give information and warnings. When you first see them, they offer useful advice in a manner that isn't overly intrusive. When you start using Windows XP, a balloon hint offers you a tour of Windows XP. Another hint pops up when you first connect to the internet, prompting you to set up your .NET passport to help you enjoy the internet to its full extent. You see balloons to warn you when a network connection has terminated, or to inform you that you've successfully connected to a network. All of this is useful and helpful information.

However, some people aren't fans of the balloon hint. Clearly there is an element of taste in this, but for those who get perturbed by balloons, there is a way to suppress these hints. By an astonishing feat of reverse logic, you can block the hints by creating a DWORD value that enables balloon hints and then giving this value data that turns the hints off. See below for details.

Pop the Bubble

Stop balloon hints popping up at inopportune moments

Open the Registry Editor, expand HKEY_CURRENT_USER and browse until you can display this key: HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Explorer\Advanced. Create a new DWORD value by choosing Edit > New > DWORD value. Right-click this and rename it EnableBalloonTips. By setting this value to zero, you disable balloon hints. If it isn't already zero, right-click and choose Modify. To restore balloon hints, change the value to one. Because this is a change to the current user settings, you may need to log off and back on before the change is confirmed.



Set the DWORD value EnableBalloonTips to zero to block the bubbles.

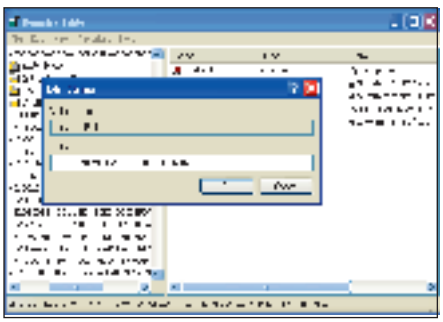
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Personalise My Computer

Set the My Computer icon to display which user is currently logged in

If you enjoyed personalising Windows Media Player 9 Series earlier on, you'll love this tweak; it enables your PC to display the username of whoever is logged on, in place of the words My Computer on the Start Menu. If you have more than one PC running Windows XP, you can get them to display the name of the computer as well.

For example, if the user Dave was logged in at the PC in his study, which is named after its location, you would see Dave on Study instead of My Computer. If he logged out and his daughter Sarah logged in, it would show Sarah on Study. Sometimes small touches are great fun.



Change the Localised String properties to show the current user and computer name.



Don't be tempted to simply edit Localised String. By retaining the old version, you can revert to your previous settings quickly and easily; you won't need to worry about the exact setting of this value, because you'll still have it.

- **Open Regedit** in the usual way and expand HKEY_CLASSES_ROOT to display HKEY_CLASSES_ROOT\CLSID\{20D04FE0-3AEA-1069-A2D8-08002B30309D}.
- **Select HKCR** and choose Edit > Find. Enter 20D04FE0 into the search bar and click Find Next. Unless you have some funny registry entries, you should jump to the correct key.
- **The value** you need to change is called LocalizedString. It's an expandable string value but don't edit this directly; instead, right-click it and rename it LocalizedString.old. This gives us a fallback.
- **Now create** a new string value by choosing Edit > New > Expandable String Value. Right-click this value and choose Rename. Call it LocalizedString, to replace the value that you renamed.
- **Right-click** the new version of LocalizedString and modify its value to %USERNAME% on %COMPUTERNAME%. Enter this exactly as it is written. Close Regedit and reboot your PC.



This sort of edit is particularly useful for modifying PCs on a network. You can make the same changes at each PC, but the label it creates will be different for each person and each computer.

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Browser Branding

Is Internet Explorer branded by your ISP? Reclaim it now…



If you'd prefer not to have any branding on Internet Explorer or Outlook Express, browse to the keys discussed here. Delete the WindowTitle string value and restart Windows XP. You should now have branding-free applications.

A frustration with installing ISPs from their CDs is that they stamp their branding over Internet Explorer and Outlook Express. We don't want our browser title bar being used for advertising: browser branding has to go.

Or does it? What if you could change the branding and use it as a personalised title bar? Not only will it look stylish, it may even deter thieves. Thankfully, this is very easy to achieve. You just need to edit a couple of registry keys.

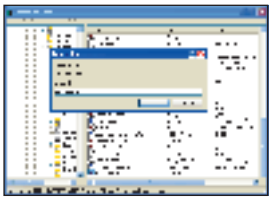
Expand the HKEY_CURRENT_USER hive to HKEY_CURRENT_USER\Software\Microsoft\Internet Explorer\Main, to modify Internet Explorer and to HKEY_CURRENT_USER\Identities\{user id code}\Software\Microsoft\Outlook Express\5.0 for Outlook Express, where the user id is a hexadecimal string (there's one for each OE identity). If your programs already have branding, you'll find a Window Title entry, which you can modify. If your browser was in a virgin state, you may need to create this string value afresh.



Most of the value entries in HKEY_CURRENT_USER\Software\MicrosoftInternet Explorer\Main simply contain the settings that you can modify on the Advanced tab of the Internet Options Dialogue, which you can open by choosing Tools > Internet Options in Internet Explorer.



1 Launch Regedit. Back up the registry as described above. Expand HKEY_CURRENT_USER to show the following key: HKEY_CURRENT_USER\Software\Microsoft\Internet Explorer\Main.



2 If there is no Window Title string value, right-click, choose New > String Value, and create it. Right-click it and choose Rename > Modify This Value, with your chosen text. Launch Internet Explorer. Your chosen text will now be in the title bar.



3 Return to Regedit and browse to this key: HKEY_CURRENT_USER\Identities\{user id code}\Software\Microsoft\Outlook Express\5.0. The user id code is a hexadecimal string and one exists for each identity in OE. Create or modify the Window Title string value in the same way.

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Login Prompt

Add a message to the login screen with a simple registry edit

Do several people use your PC? Why not leave them a message at the Windows XP login? With a careful registry edit, you can place a note that will be read by anyone before they log on. You'll need to disable Fast User Switching and the Welcome Screen for the hack to work, but these are easily accomplished in Control Panel. You can leave any text you like there; it could be a joke, instructions for users, or just an interesting fact to lighten someone else's day.

This customisation has its use as a security device: if your PC carries branding on the login screen, it could deter any thief without a lot of computer knowledge. Admittedly, the message is easily removed if you know the registry, but it will make an opportunist think twice.

Create a new string value called LogonPrompt in the HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Winlogon key into which you type your message. You'll see it again when you log off.



Do any of the people who use your PC have bad memories? Why not use a login message to remind them of important dates, things to do, or just items of trivia?



1 For this tweak to work, you need to turn off Fast User Switching and the Welcome Screen. In Control Panel choose User Accounts, change the way users log on and off and clear both check-boxes.



2 Launch Regedit in the usual way. Navigate to this key: HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\Winlogon, and create the string value LogonPrompt by choosing Edit > New > String Value, and renaming it appropriately.



3 Right-click the new value and modify it to include the text you want displayed at the logon prompt. Close Regedit and log off. If your customising has been successful, your chosen message will be displayed on the logon screen.



This registry edit is popular with network administrators, because it enables them to leave important messages for people using the system. Everyone has to log in but some people don't check their email very frequently.

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Chapter 9

Windows Interface

Get to grips with the registry settings that control Microsoft Windows XP itself

Microsoft Windows xp

Yes you can...

- Manage your desktop settings
- Alter keyboard delay and speed
- Change the appearance of system icons

Project time...

30 mins

More Info



www.winguides.com/registry/

As your knowledge of the registry grows, you'll understand just how complex it is. You'll also begin to appreciate how you can gain insights into the way Windows XP runs; you'll learn how to modify its intimate settings and get it singing to your tune.

Some of the settings we'll explore here are most easily controlled within the Windows interface itself. The knowledge of these areas of the registry will enable you to alter them remotely, or fix problems with them in the unlikely event that they should arise. However, our advice is to practice making these registry edits by all means, but also to try to use the relevant areas of the Windows XP interface wherever possible. Most are found in Control Panel, and we'll point them out.

Keyboard Settings

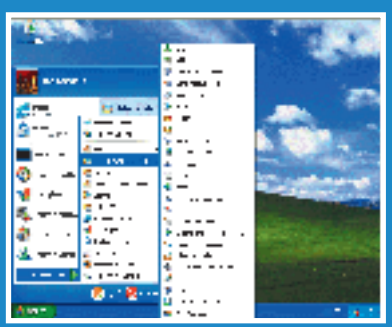
The registry holds some setting which you simply can't access through any other means. You won't find a dialogue to change the way the task switching dialogue behaves, nor one that enables you to carefully position a company logo



Page 92 Learn how to alter wallpaper settings in the registry



Page 93 Change the way icons are arranged in the task switching dialogue



Page 95 Add all Control Panel applets to the Start Menu

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Microsoft Windows xp

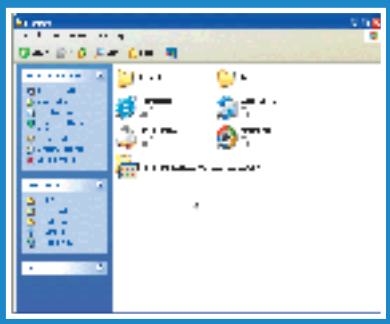
on the screen. You'll find out ways to ensure each user on your PC has Num Lock on or off when they log in, according to their own taste. This may seem a trivial matter, and to many people it is, but to some people trivial irritations do matter.

In a less trivial matter, adjusting the keyboard delay and keyboard speed will enable you to match the behaviour of auto-repeat to the typing style of each of your users. Each account can be set up differently, enabling you to become a popular PC administrator.

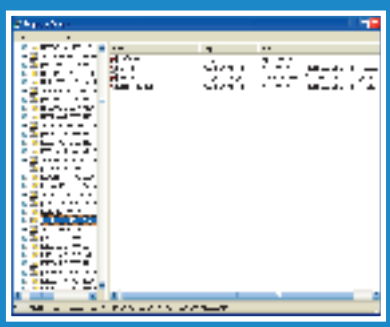
SIDs

To apply different settings for different users, you need to know each user's security identifier or SID and edit the subkey of HKEY_USERS named after that SID. SIDs are long codes and are quite difficult to follow. The alternative is to log into the account you want to change and then edit HKEY_CURRENT_USER instead. Of course, if you don't have multiple users set up on your PC, you can stick to editing HKEY_CURRENT_USER anyway.

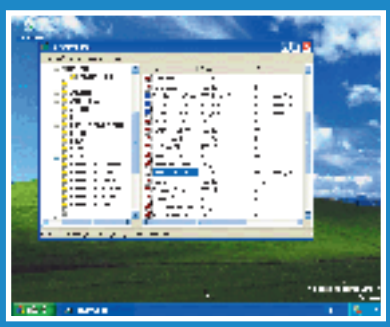
Not strictly a registry edit, but adding the contents of Control Panel, the Printers folder and Recycle Bin to the Start Menu is a pretty cool tweak. This makes it far easier to find your way around.



Page 95 Use class identifiers (CLSIDs) to add new functions to the Start Menu



Page 97 Customise My Computer, Recycle Bin and Internet Explorer



Page 99 Display the version and build number of Windows XP on the desktop

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Wallpaper

Find out how the registry holds wallpaper settings and details



SID stands for Security Identifier. It's how the registry determines which user account you are dealing with. It's usually a long string of numbers separated by dashes. You can find out your SID by opening Regedit and looking under HKEY_USERS. There is a subkey called .DEFAULT and also one for each other user, named after their SID.

It's easy to change the wallpaper and desktop settings in Display Properties; you can reach this by right-clicking on the desktop and choosing Properties. You can see effects before you apply changes and making changes is easy – so why would anyone want to use the registry to make changes?

Few home users would want to change the registry when there's an easier way to do things. However, if you're managing numerous PCs, the repetitive task of using Display Properties becomes far more of a fiddle than making some remote registry edits. Knowledge of how to complete tasks like this in the registry is never wasted anyway.



Display Properties is better looking than Regedit, but the latter holds more opportunities.



If you're still having problems working out which SID is yours when you look through HKEY_USERS, try opening each subkey and looking for familiar information. For example, if you use Outlook Express, you may find your username in the Identities subkey.

- **The key** HKEY_USERS\[SID]\Software\Microsoft\Internet Explorer\Desktop\General, where [SID] is the security identifier of the account in question, contains an expandable string value entry called Wallpaper. The string is the file path of the wallpaper image.
- **The string** value in the same key (WallpaperStyle) holds the instruction to resize the image file to fit the Desktop or to keep its original size and shape – 2 means stretch; 0 means retain the size.
- **Also in** the same key is the TileWallpaper string value. Set at 0, the wallpaper image will not be tiled; a setting of 1 means the image will be tiled and repeated.
- **In HKEY**_USERS\.DEFAULT\Control Panel\Desktop, settings for the default user are stored. The string values WallpaperOriginX and WallpaperOriginY provide co-ordinates for the bottom-left of the wallpaper image. This enables you to place a small picture in one corner of the desktop.

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Task Switching

It's possible to customise how Windows XP handles task switching

You can switch between multiple open windows using their taskbar buttons, though once these begin to stack up, it stops being convenient. Or you can switch between windows by holding [Alt] and pressing [Tab] repeatedly to scroll through applications. The dialogue that pops up is known as the task switching dialogue.

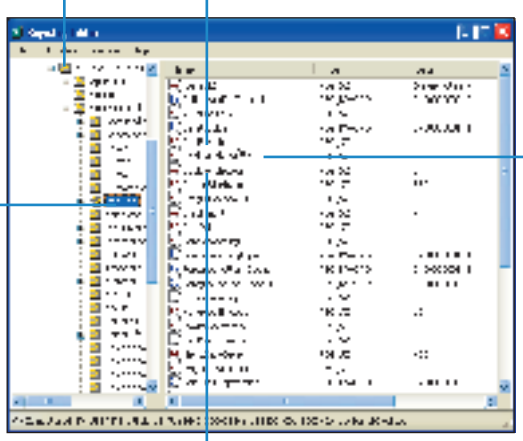
You can customise this dialogue for each user. There are registry values for the number of columns and rows of icons shown in the box. By default, these stand at seven and three respectively, but you can use fewer or greater, depending on the number of windows you have open and the resolution of your display.



Change how the icons appear in the task switching dialogue with a registry edit.

Screen resolution is an important factor in deciding how many columns and rows of icons to use. There's no point in setting 12 columns of icons if this much won't fit horizontally on your display.

Task Switching



SID In HKEY_USERS open the subkey with the SID number that relates to the user for whom you are making the changes.

In Regedit, browse to HKEY_USERS\[SID]\Control Panel\Desktop, the key that holds the task switching value entries.

CoolSwitch. This string value used to hold the value for the type of task switching used. Modifying it won't change anything.

CoolSwitchColumns. Change this string value from the default 7 columns to more or less, depending on resolution and number of tasks.

CoolSwitchRows. By default at 3, this value determines the number of rows used in the task switching dialogue.

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Keyboard Settings

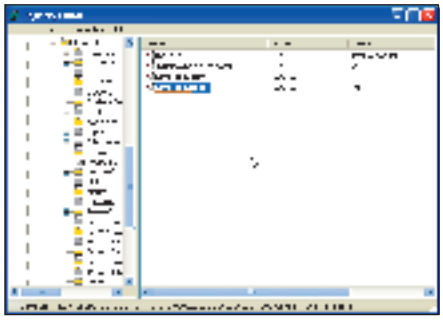
How do you like your Num Lock button or keyboard delay? Changing them is easy



SIDs getting too confusing for you? If you're the only user of your PC, you can modify the keys under HKEY_CURRENT_USER instead of using HKEY_USERS\[SID], where [SID] is your security identifier. That's much less confusing.

The way your keyboard interacts with Windows XP can be modified by tweaking some registry entries. Many people like the Num Lock key to already be on when they log into Windows; others prefer it to be off. This is something that can be set in the BIOS, but then you're stuck with one setting. If you have two users with different preferences, you can set this in the registry settings for the users concerned.

Most keyboard settings are held in the key HKEY_USERS\[SID]\Control Panel\Keyboard, within which you can alter the keyboard delay and speed in order to suit each user's typing style.



Alter settings like keyboard delay and keyboard speed to match your users' typing.



You can easily change most keyboard settings in Control Panel. It's handy to know how to modify them in the registry, but it's much less hassle to use the graphical user interface controls.

- **Do you** have to turn on Num Lock after you log in? Make sure it's on by editing the string value InitialKeyboardIndicators in HKEY_USERS. If this value is set to 2, Num Lock will be on when you log on, regardless of its previous state.
- **KeyboardDelay** is a string value that determines how long you have to hold a key down before auto-repeat kicks in. This is normally set at 1, but you can make it longer by choosing 2 or 3, or you can shorten the delay by setting the value at 0.
- **KeyboardSpeed** determines the how quickly a keystroke is repeated once auto-repeat has kicked in. This string value varies from 0 to 31, with the higher value being the equivalent of 30 characters per second, and the lowest value providing around 2 characters per second.
- **In HKEY**_USERS\[SID]\Keyboard Layout, data about the user's keyboard layout is stored. You can change this in Control Panel.

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Start Menu Additions

Add extra buttons to the Start Menu – your gateway to Windows XP

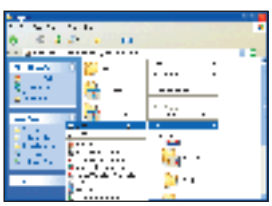
Knowledge of the registry in general and class identifiers (CLSID) in particular enables you to customise your Start Menu. By creating folders in your Start Menu named in the right way, you can make the contents of such areas as Control Panel and the Recycle Bin accessible from the Start Menu.

This enables you to not just launch Control Panel, which you can already get to from the Start Menu, but to get to each applet directly. With the Printers folder, you can access each printer directly. This gives you flexibility in working your way around the interface.

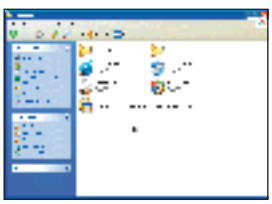
Create one folder per object in the Programs folder of your Start Menu. Name the folder with the name of the object followed by its CLSID enclosed in curly brackets. The name and CLSID must be separated by a dot – for example, Control Panel.{21EC2020-3AEA-1069-A2DD-08002B30309D}; Recycle Bin.{645FF040-5081-101B-9F08-00AA002F954E}; Printers.{2227A280-3AEA-1069-A2DE-08002B30309D}. It's vital that these are entered exactly as written.



Make sure the CLSID is entered within curly brackets as shown. Everything before the dot is shown as the folder title. You can alter this if you like, but all characters after the dot must be as shown, or this tweak won't work.



1 Choose Start > My Computer and browse to C:\Documents and Settings\[username]\ Start Menu\Programs, where [username] is the user account in question. Right-click anywhere in this folder and choose New > Folder.



2 Right-click the new folder and choose Rename. Call this Control Panel.{21EC2020-3AEA-1069-A2DD-08002B30309D} or the relevant name and code for the component you want to add. Click away from the folder to finalise the action.



3 Watch as the folder icon changes to that of the component. Close the Windows Explorer window. Now click Start > All Programs and find the new entry for Control Panel. You can now navigate directly to any Control Panel applet from the Start Menu.



Try entering the folder titles, including the CLSID codes into Notepad. Save this text file in an easily accessible place. If you ever need to use this tweak again, launch the file and use copy and paste to save typing the codes out.

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Window Appearance

Change the way Windows XP moves and resizes windows



You can change to using window outlines in the Display Properties dialogue. Right-click the desktop and choose Properties. Select the Appearance tab. Press Effects... and clear the box marked 'Show window contents while dragging'. Then click OK twice.

One of the attractions of Windows is the ability to move items around the screen by clicking and dragging. Sometimes you might do this as part of an editing operation or for file management, when you move or copy files and shortcuts from one folder to another one. You might also choose to click and drag to move or resize program windows.

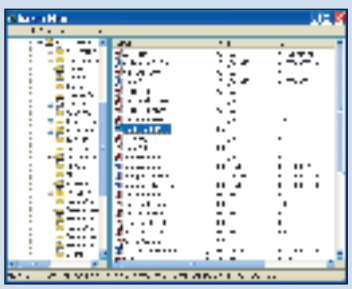
Some earlier versions of Windows only displayed an outline of the window as you moved or resized it. This was to save processing power. Now faster CPUs are the norm, so Windows XP by default animates the whole move. However, you can turn this feature off if you need to use resources more efficiently.

You can also alter Windows sensitivity to click and drag operations. To compensate for an unsteady mouse hand, you can change the amount of horizontal and vertical movement required before Windows XP concludes that a drag action is happening. Equally, you can make it more sensitive to improve responsiveness.

Is it Getting To Be a Drag?

How to modify the way Windows XP treats drag operations

To change from moving full windows to moving outlines only, in Regedit, browse to either HKEY_CURRENT_USER\Control Panel\Desktop or HKEY_USERS\[SID]\Control Panel\Desktop, depending on whether you're editing your configuration or someone else's. Select the string value DragFullWindows, right-click it and choose Modify. Change the data entry to 0 (zero). To change the sensitivity to drag operations, stay in the same key and examine the string values DragHeight and DragWidth; these determine the minimum amount of vertical or horizontal movement needed to trigger a drag operation.



Change to dragging window outlines only, to save resources.

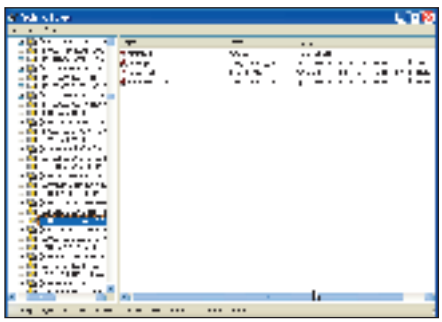
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Changing System Icons

Take customisation to the next level by altering your system icons

You can change most folder icons and those for shortcuts by right-clicking and choosing Properties > Change Icon, but the likes of My Computer, Internet Explorer, Outlook and the Recycle Bin need to be altered in the registry.

You do this in HKEY_CLASSES_ROOT\CLSID, which contains numerous subkeys, each named after a Windows object's Class Identifier, (CLSID). Identify the subkey for the system icon you want to change and modify the value entries named (Default) and LocalizedString to change the icon text. The subkey DefaultIcon contains the value (Default) which holds the file path of the icon file.



Edit the subkey labelled with the system icon's CLSID to change its properties.



The InfoTip expandable string value contains the file path of the text that appears as you roll the mouse cursor over the system icon concerned. The default values point to the dynamic link library shell32.dll and a location within that, but you can use any file path you like.

- **Open Regedit** and browse to HKEY_CLASSES_ROOT\CLSID. Use Edit > Find Next to hunt for the first part of the icon's CLSID.
- **Some useful** CLSIDs: Outlook 00020D75-0000-0000-C000-000000000046; My Computer 20D04FE0-3AEA-1069-A2D808002B30309D; My Network Places 208D2C60-3AEA-1069-A2D7-08002B30309D; Recycle Bin 645FF040-5081-101B-9F08-00AA002F954E.
- **Select the** subkey named after the CLSID of the icon you want to change. Rename (Default) and LocalizedString by right-clicking them and adding the word 'old' at the end of their titles.
- **Choose Edit** > New > String Value, and call it (Default). Modify it to contain the title text you want. Do the same for the expandable string value Localized String.
- **To change** the icon, go to the subkey called DefaultIcon. Rename the (Default) expandable string value and make a new one as before. Enter the file path of your icon file as the data value.



By renaming the original value entries instead of deleting them, you can get back to the original values easily: just remove the new entries and delete the word old from the original value entries.

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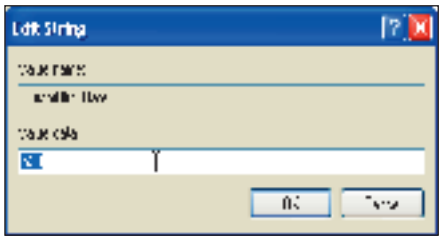
Cursor Rate

Gain control over the blinking cursor by tweaking the registry

The cursor blink rate can be changed in Control Panel. Use Classic View and open the Keyboard Applet. On the speed tab, you'll find a slider to control the blink rate.

The cursor, which blinks while waiting for you to enter some text, can be configured a little in the registry. Its size and shape can be altered in Control Panel, by switching to Classic View and launching the Mouse applet. On the Pointers tab you can select the pointer scheme you want.

In the registry, you can specify how quickly the cursor blinks. This may seem a rather minor adjustment, but it can affect the way you work – a faster blink rate suggests urgency, making entering text seem a little more important; equally, slowing the blink rate calms the tempo a little, which might be appropriate if you're feeling a little stressed or if you want to make sure your choice of words is correct.



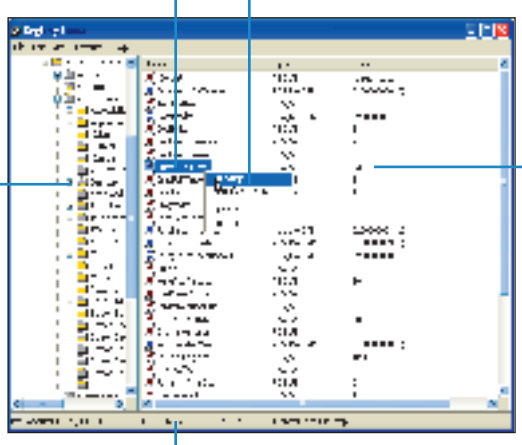
The Default cursor blink rate is 530 milliseconds: just over half a second.

How to Get Faster or Slower Flashing

The CursorBlinkRate string value is, appropriately enough, that which holds the setting for blink rate.

Open Regedit in the normal way and browse to HKEY_USERS\[SID]\Control Panel\Desktop.

If you are the only user, or you only use one Windows XP account, instead of looking for a SID, use HKEY_CURRENT_USER\Control Panel\Desktop instead.



Select CursorBlink Rate and right-click it. Choose Modify to change the speed that the cursor flashes at.

530 is the default speed, which is the time in milliseconds that the cursor is off and on. Increase for slower blink.

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Version Branding

Display on the Desktop the version of Windows that you are running

Versions of Windows used for beta testing, which is where a limited group of public users try it out before it goes on general release, tend to have the version of Windows displayed in the lower right-hand corner of the desktop. This not only displays the version of Windows, such as 98, Me, or XP, but also the build number. This is important for beta testing, so that when a user reports an error, it is easy to see which build it is. During beta testing, successive builds are made to correct issues as they arise. It's therefore vital to know if the problem being reported has already been fixed or not.

Full versions of Windows don't display the version on the desktop, but they can be quite easily persuaded to do so. A simple registry edit will stamp the version of Windows on your desktop, in case someone is having problems recognising Windows XP.

If nothing else, this tweak is a nice way of proudly proclaiming yourself as a fully-fledged, 21st century Windows XP user.

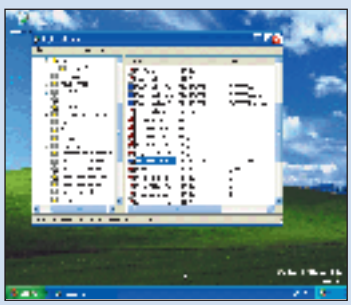


The build number for a current version of Windows XP should be 2600 or later. If this number is lower than that, you may be using a beta version. If you have been sold this, it is probably an illegal copy. Visit www.microsoft.com/piracy for advice.

Brand Your Desktop

How to display the Windows version and build number

Open Regedit in the normal way. Now expand HKEY_USERS to display HKEY_USERS\[SID]\Control Panel\Desktop. If you are the sole user, or there is only one user account used on your PC, use HKEY_CURRENT_USER\Control Panel\Desktop, because then you don't have to worry about SIDs. You can also use this key if you are logged into your own account and you don't want to change any others. Locate the DWORD value PaintDesktopVersion. Right-click the value entry and choose Modify. Set the value to 1 (one). Log off and log back on again.



Change the PaintDesktopVersion value to 1 and display the version of Windows you're running.

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Chapter 10

Miscellaneous Tw

A mixed bag of registry edits that will demonstrate your new-found mastery over your machine

Microsoft Windows xp

Yes you can…

- Hide My Computer and Control Panel
- Clear virtual memory on shutdown
- Customise your Windows tips

Project time…

50 mins

More Info

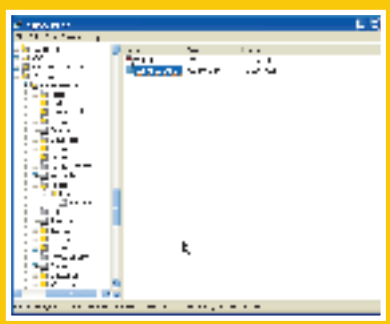


www.winguides.com/registry/

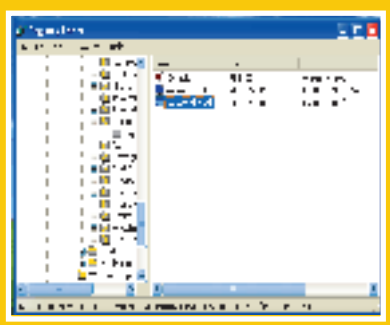
Now you've had a bit of practice editing the registry, it's time to unleash you on some varied, interesting and quite advanced edits. We'll start with some tweaks that will enable you to make your PC more secure. You'll find out how to prevent fiddling fingers from reaching My Computer and browsing the system files. You'll be able to remove Control Panel from the Start Menu to prevent inquisitive users from messing around with all the settings. More importantly, the shortcut to the Computer Management console can be removed from the My Computer context menu; this will stop idle fiddlers from gaining access to some quite serious settings and tools.

Fiddling

None of these tweaks will stop a serious cracker, but they should hold off people for whom the devil makes work when their hands are idle. It will stop those who just 'wonder what will happen if I…' In most environments, these are the people you really have to fear.



Page 102 Hide My Computer so it isn't accessible from the Start Menu



Page 103 Remove Control Panel from the Start Menu to discourage fiddling



Page 104 Flush out the swap file when you shut down your PC

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eaks

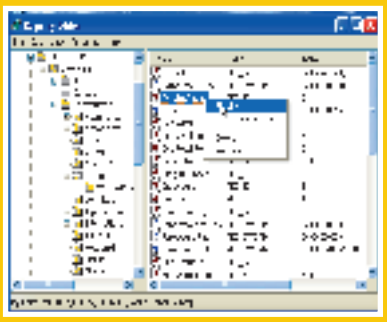
Microsoft Windows xp

Having made your PC a bit more secure, we'll try to make it a bit more stable too. By flushing out the virtual memory each time you shut down, your system should be a little quicker and more responsive. Irritating applications which fail to shut down properly can block your PC's shutdown. With a quick edit, you can force any open processes to shut down when you choose to close Windows.

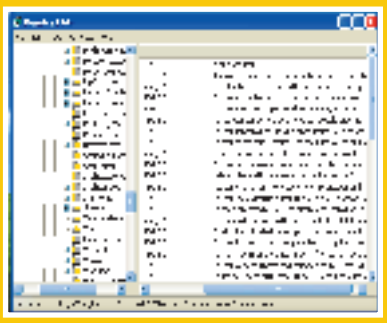
Shutdown

If you are experiencing problems that mean that your PC will have to shut down, using the shutdown tracker will ensure that you have a log of the fault. And talking of logging faults, gaining fine control over Error Reporting will make sure that you use this more efficiently. The system, which Microsoft designed to keep them informed of problems with Windows XP and the programs it runs, and also to get up-to-date solutions out to users automatically, can be inefficient under its default settings. Microsoft can do little about third-party applications that go wrong, however, other than point you to the vendor's website, so you may want to limit Error Reporting to Microsoft programs only.

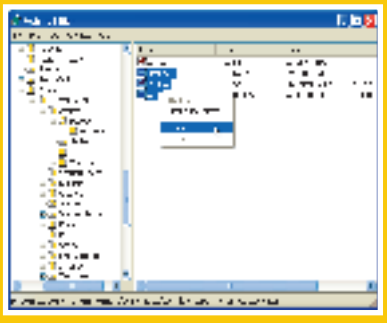
Finally, if Regedit itself plays up, try modifying its registry entries. You can easily return it to its default settings. You can also come up with your own tips for Windows XP to display.



Page 105 Force all tasks to end when you shut down



Page 107 Make up your own Windows XP tips to amaze your friends



Page 109 Return Regedit to its default settings by deleting some value entries

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Remove My Computer

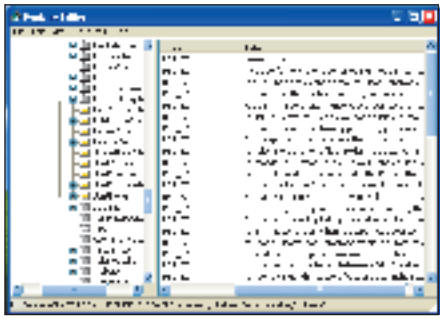
Stop users browsing through files and folders that you don't want them to access



As an alternative to editing the user's SID key under HKEY_USERS, log on to the user's account and edit HKEY_CURRENT_USER instead. This is an important shortcut if you can't work out which is the right SID.

One temptation for PC novices is to explore the workings of their computer. Rarely do people get a screwdriver out and take the innards apart, but the files inside Windows XP seem to draw folk in. The warning message as you double-click to open the Windows folder merely adds to the excitement. Sadly, any modifications made by people who don't know what they're doing are rarely improvements.

By removing My Computer from a user's Start Menu, you can stop idle browsing. There are other ways to get at the system files, but they require more in-depth knowledge. Consider this tweak as a useful safety barrier.



The DWORD value named after the correct class identity blocks My Computer.



With this sort of edit, it's absolutely vital that you enter the key name and value entry name correctly, including the correct case of each character. If you get a character wrong, this tweak won't work at all.

- **Launch Regedit** and expand HKEY_LOCAL_MACHINE until you can see the following key, which you may have to create: HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\Current Version\Policies\NonEnum.
- **Choose Edit** > New > DWORD Value. Right-click the new value and rename it: {20D04FE0-3AEA-1069-A2D8-08002B30309D}.
- **Right-click** the new value and choose Modify. Make the value 1 (one). Restart Windows to block My Computer for all users.
- **To block** My Computer for one user, browse to HKEY_ USERS\[SID]\Software\Microsoft\Windows\CurrentVersion\Policies. Choose Edit > New > Key. Right-click the new key and rename it NonEnum.
- **Open the** NonEnum key and choose Edit > New > DWORD Value. Rename it {20D04FE0-3AEA-1069-A2D8-08002B30309D}. Right-click the new DWORD value and select Modify. Change the number to 1 (one). Close Regedit and log off to effect the change.

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Computer Management

Hide the Manage option in the My Computer context menu

If you want to keep My Computer, you might block the Manage option in the My Computer context menu. Click Start and right-click My Computer from the context menu and choose Manage. This opens the Computer Management Microsoft Management Console (MMC), which provides access to Device Manager, Disk Management, Services, Local Users and Groups, along with many other System Tools. These tools go to the very heart of your PC.

Clearly, the chance to remove the Manage option from the My Computer context menu is one worth taking. This is an edit you can apply to individual users, so either log into the account concerned and edit HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer, or edit HKEY_USERS\[SID]\ with the rest of the key being the same, ensuring that the SID is that for the user account concerned. Create a new DWORD value named NoManageMyComputerVerb or edit it if it already exists. Set the data to 1 and close Regedit.

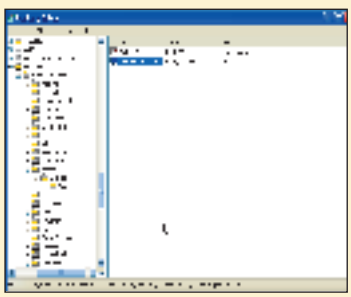


Keep a list of your users' security identifiers in a text file. Use this to quickly find a SID when you're editing the registry to change things in individual accounts.

Disable Control Panel

How to remove Control Panel to stop fiddling fingers

You can apply this tweak to individual users or to all users. To remove this for all users, make the edit in HKEY_LOCAL_MACHINE\Software; otherwise make it in HKEY_USERS. Open Regedit and browse to HKEY_USERS\[SID]\Software\Microsoft\Windows\Current Version\Policies\Explorer. Choose Edit > New > DWORD Value. Name the value NoControlPanel. To enable the restriction, right-click the DWORD value and choose Modify. Change the data to 1 (one). To disable the restriction, right-click and choose Modify. Now change it back to 0 (zero).



Use NoControlPanel to hide Control Panel on the Start Menu.

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Clear Page File

Make sure that virtual memory is flushed out when you shut down your PC

If you have a large swap file, this tweak could add a considerable delay to the shutdown time. This is because it takes time to clear the items stored in the swap file.

Windows XP uses a file on your hard drive as if it were RAM. This is variously termed Virtual Memory, the Swap File or the Paging File. Routinely, this holds temporary data to free up your RAM to handle data that changes more rapidly.

When you shut down your PC, the swap file is normally preserved. This can lead to inefficiency, as it slowly clutters up. If your data is sensitive, this could also be a security threat, because the swap file remains accessible even after you've deleted or destroyed the files it contains. This particular edit flushes out the swap file whenever you shut down Windows XP.



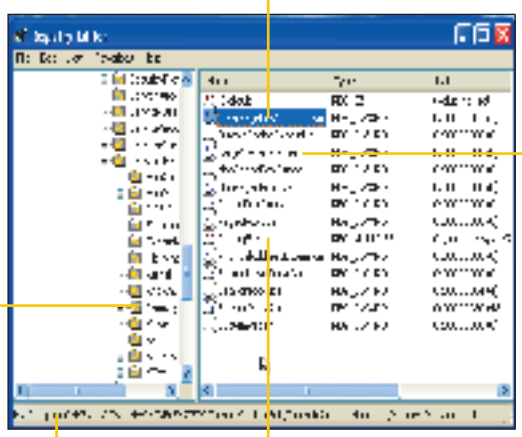
When you shut down your PC, the paging file isn't cleared. A simple edit changes that.

How to clear Page File

Either create or modify the DWORD value called ClearPageFileAtShutdown, which defines whether the memory flush happens.

The Memory Management subkey contains a number of configurations for RAM and virtual memory.

Open the Registry Editor and browse to the key HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Memory Management.



To turn on the shutdown virtual memory clear out, right-click and choose Modify. Set the value as 1 (one).

The LargeSystem Cache when set to 1 (one) places the cache at higher priority than running processes. It's used mainly for servers.

The PagingFiles string value contains the location of the various paging files on your PC.

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Hang It

Learn how to automatically end any programs that have been left hanging

When Windows XP is freshly installed and well maintained, you should have no shutdown problems, which are usually caused by third-party drivers and applications failing to shut down properly. If a program hangs and won't close, you normally press [Ctrl] + [Alt] + [Delete] to bring up the Windows Task Manager, move to the Applications tab and choose the program you want to force to close. You'd then click End Task and confirm this action to close a hung application.

When you shut down, this is less convenient, because a hung program can stop Windows XP from shutting down at any point during the shutdown. Trying to use the Windows Task Manager isn't very convenient, which is why this edit is handy. You can get Windows XP to force all programs to close when you shut down.

When used with the tweak that lowers the amount of time that Windows XP waits for a non-responding application to close, hung programs will be less bother.



If Windows XP itself freezes during shutdown, your best option is to remove the power and then reboot to try and clear the problem. Some PCs are set to turn off as soon as you press the power button; others need you to press and hold the on/off switch for around ten seconds.



1 In order to apply this tweak to a single user, either log on as that user, launch Regedit and browse to HKEY_CURRENT_USER\Control Panel\Desktop, or launch Regedit and browse to HKEY_USERS\[SID]\Control Panel\Desktop, where SID is the user's security identifier.



2 In order to apply this tweak to all users, browse to HKEY_USERS\.DEFAULT\Control Panel\Desktop. Select the String Value AutoEndTasks and right-click it. From the context menu you then select Modify to edit this value entry.



3 To enable automatic ending of tasks, set the data value to 1 (one). Click OK and exit Regedit. You may need to restart Windows XP for it to take effect. You might also consider lowering the WaitToKillAppTimeout string value.



To reduce the time Windows XP waits to kill a program that isn't responding, browse to the same key as described in the walkthrough. Now change WaitToKillAppTimeout to a lower number. The default is 20000 milliseconds, or 20 seconds.

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Shutdown Tracker

Set the registry to make a log file of all the reasons for restarting your PC



Shutdown issues are often created by processes that start automatically and run in the background. Turn back to page 74 to find some instructions on removing such unwanted startup components.

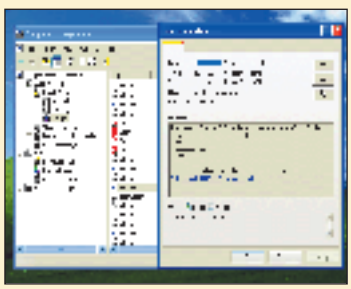
When you install new hardware and software, you often need to restart your PC. Equally, when Windows XP encounters hardware problems or unstable third-party drivers, it may need to shut down. Unfortunately, when Windows has to shut down because of an error like this, it can be hard to work out the cause of the problem – Error Reporting will only get you so far. If, as is normally the case, the problem that caused Windows XP to shut down was due to a third-party driver, this may be all that Error Reporting can tell you. So is there a way to sort this out?

The answer lies in yet another cunning edit. Launch the Registry Editor and browse to the following key: HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Reliability. Now find or create the DWORD Value ShutdownReasonUI. Right-click the value and choose Modify. Set the data to 1 (one). Exit Regedit and restart. A log file will be created to document the reason for each time your PC has to shut down.

View the Log

How to find the log file

It's all very well making a log file of shutdown events, but this is no use if you can't read it. To read the shutdown log, choose Start, right-click My Computer and select Manage from the Context Menu. In the Computer Management console, expand System Tools. Now expand Event Viewer and select System. You'll find numerous events logged here. Scroll down to look for the shutdown event. Use the time stamp to identify it. Pick a likely event and double-click it to read the details. These will include the reason for the shutdown; in this case it was initiated by the user.



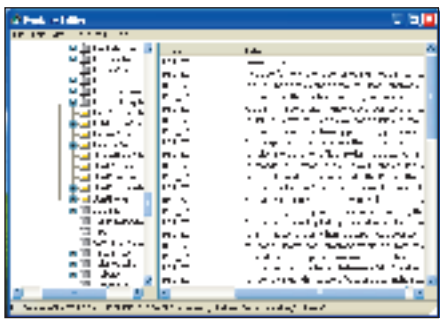
You can view the log file in the Event Viewer.

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Custom Tips

Make your own Windows tips to help others, or for your own amusement

When you first start using Windows XP, you are presented with a new tip each time you start up your PC. Most people turn these off after the first few goes, but there are 50 of these tips in total. You can have some fun by changing these tips to other messages, or use them to impart information about the local network. These could be used by an organisation to help with staff training, or in a library to give out local information about the area or upcoming events.



Each tip is just a registry string value, so you can change them easily.

Alternatively, you could use these tips to surprise family members, or to tell a joke. Personalise the tips for family and friends, if you dare.



Many users ignore onscreen tips. It's therefore not a good idea to make these the only source of the information they contain. Consider other methods of communicating the information, like posters or an intranet page.

- **There are** 50 tips in Windows XP. The system recognises just 50, so you must not exceed this number. Any surplus tips will simply not be shown.
- **To edit** the tips, launch Regedit and browse to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer\Tips. This key contains all the tip value entries.
- **Choose File** > Export, choose Selected Branch, call the file 'tips' and save it in a suitable place. If anyone wants the original tips back, just browse to this file and double-click it to add the original value entries back to the registry.
- **Now you're** free to create some of your own tips. The string values are numbered 1 to 50. The data in each value is the tip text.
- **Right-click** one of the string values and choose Modify. Delete the existing tip and enter the text you want to use instead. Close Regedit and restart your PC for the new tips to take effect.



Each tip string value has a number. These numbers determine the order in which the tips are displayed. This is worth bearing in mind if you want your tips to have a sequence.

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Error Reporting

Control how and when Error Reporting gets in contact with Microsoft



The error reporting DWORD Values are enabled by default. This means that they are set to have a value of 1 (one). Change the value to 0 (zero) to disable that particular function.

Error Reporting is a great idea. When you run into a problem, the error report, containing a brief note of what went wrong, is sent to Microsoft. If the problem is a known issue, you may be sent a link to a web page, telling you how to fix it. If it isn't known, the issue is logged, examined and used to add to Microsoft's knowledge base and future development programme.

You can limit the scope of Error Reporting by choosing Start, right-clicking My Computer and choosing Properties, and then turning to the Advanced tab. Click Error Reporting and Choose Programs. Now select 'All programs in this list' for a Microsoft-only focus.



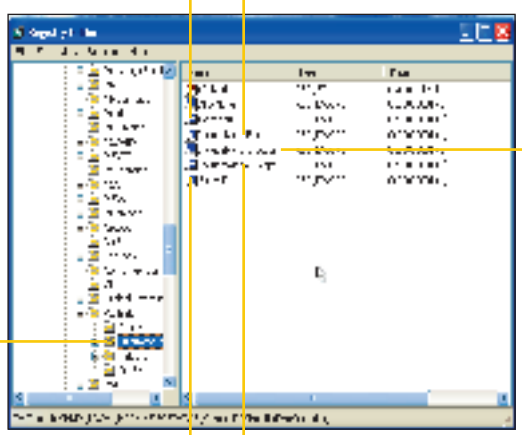
Narrow Error Reporting to cover just Microsoft programs via System Properties.

Modify Error Reporting

The DoReport DWORD value determines if Error Reporting is turned on or off. It's on if the value is 1 (one).

Open Regedit and browse to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\PCHealth\ErrorReporting.

ShowUI stands for 'Show the user interface'. With this set at 1, you'll see the process of Error Reporting on screen.



IncludeKernelFaults includes errors in the Windows XP kernel, when the DWORD value is 1.

IncludeMicrosoftApps when set to 1 enables Error Reporting for Microsoft programs other than Windows XP.

IncludeWindowsApps includes Windows XP components in Error Reporting, when it has the value of 1.

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Fix Regedit

You can even alter the way Regedit works by editing the registry

In a rather pleasing bit of recursion, you can modify the Registry Editor by editing a registry key. To do this you'll have to be using the Registry Editor. Changes take effect once you close down and restart Regedit.

The key that holds the Regedit settings is HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Applets\Regedit. This is a user-based key, so this version affects the currently logged-in user. To make edits to other users' versions of Regedit, browse to HKEY_ USERS\[SID]\Software\Microsoft\Windows\CurrentVersion\Applets\Regedit.

The Regedit key contains one subkey: Favorites. Each Favorite is stored in here as a string value. The name of the string value is the same as the Favorite name. The value is the full registry key name, which enables you to move directly to it. To remove a Favorite, delete the string value associated with it. You can also rename or change the key the Favorite points to by modifying the value, but it's probably easier just to create a new Favorite (see page 52).

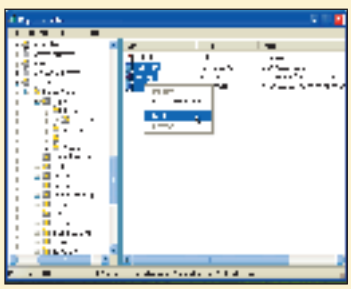


If the taskbar is behaving oddly, you may have a corrupt registry key. Open Regedit and browse to HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Explorer\StuckRects2. Back up this key and then delete it. Restart Windows and all should be fine.

Reset Regedit

Return the Registry Editor to its default settings

If Regedit isn't displayed properly, it's time to reset it. Open Regedit and browse to HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Applets\Regedit. It's a good idea to back this key up. Choose File > Export and opt for Selected Branch. Enter a filename and save it to an available location. Now select each of the value entries FindFlags, LastKey and View, holding down [Ctrl] to permit the multiple selection. Right-click this and choose Delete. Close Regedit and restart your PC. When you next open it, you should find Regedit opens as if it were for the first time.



Reset to factory defaults by deleting these three value entries.

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Chapter **11**

Cheats' Corner

There are ways of modifying the registry without having to spend all your time editing it

Microsoft Windows xp

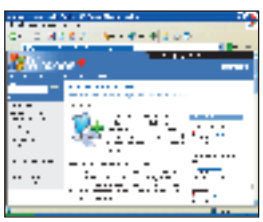
Yes you can…

- Install a tweaking program to modify the registry
- Use TweakUI, Tweaki and Tweak XP
- Make common registry edits in comfort

Project time…

50 mins

More Info



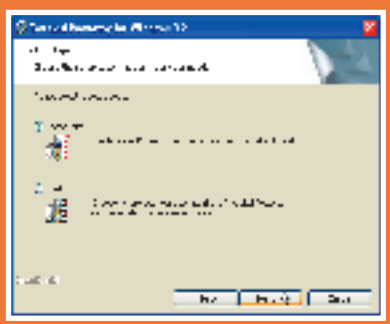
www.microsoft.com/windowsxp/pro/downloads/powertoys.asp

By now you will have found your way around the registry. You may have even made a few tweaks of your own. In the course of this, you will have probably noticed that registry editing is time-consuming and technical. While it isn't really very difficult to understand, the Registry Editor is hardly the most intuitive of applications.

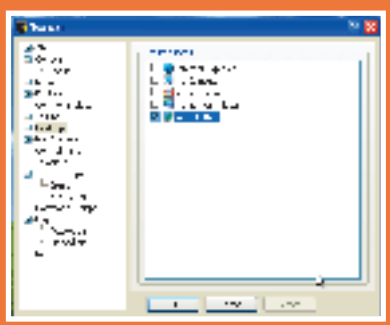
No doubt you are rightly proud of your new-found registry skills, but you can be easily forgiven for thinking 'isn't there an easier way?' or 'can't someone else do it?' Well, the answers to these questions are: 'yes', and 'no, don't be so lazy', respectively.

Solution

Many people have found registry editing frustrating and so a bunch of people have put their heads together and come up with a solution. It is the 'tweaking' program. This takes the most useful registry edits that have controls in other Windows utilities and creates a graphical user interface for them. Most commonly, this transforms registry editing from the traditional slow Regedit



Page 112 Install the TweakUI Microsoft Windows XP PowerToy



Page 113 Find your way around the TweakUI interface



Page 115 Install Tweaki... for Power Users and learn your way around

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Microsoft Windows xp

and makes it more about ticking boxes and pressing buttons.

Hooray! At last you can enable a setting by just ticking a box next to a description of what it does. You'll find this approach in several of the many tweaking programs available. The first, and probably most elegant, because it doesn't go over the top with the user interface, is TweakUI. This is a free PowerToy provided by Microsoft. We'll show you how to download it, install it and make the most useful tweaks.

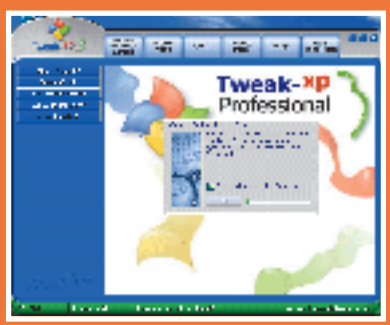
Third-Party Tools

There are a lot of great third-party tweaking utilities about and we'll introduce you to two of the best. Tweaki... for Power Users is handy and easy to use. You'll have to part with some money if you plan to use it beyond the 14-day free trial, but it does make registry editing considerably easier.

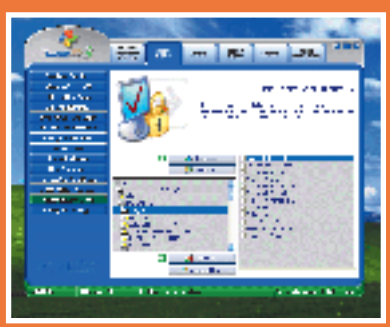
At the other end of the scale comes the weighty Tweak-XP Pro 3, to give it its full name. This allows you 30 free executions, but you'll be pestered to register from the start. This will set you back around double the cost of Tweaki, but you probably get more than double the number of features. The user interface is beautifully crafted and you get a host of extra utilities.



Page 117 Make some common handy edits using Tweaki



Page 118 Install Tweak XP, a full-featured tweaking program



Page 119 Find your way around Tweak XP's swish interface

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Install TweakUI

Get Microsoft's Tweaking PowerToy onto your computer



www.microsoft.com/windowsxp/pro/downloads/powertoys.asp

We could not include TweakUI on our cover CD, but never fear. To download the program for free simply go along to the Microsoft PowerTools website – you'll find the address here.

Manually editing the registry isn't for everyone; it's hard and unintuitive. You can achieve great things using manual edits and you certainly learn more about how your PC works, but you run the risk of damaging Windows XP if you make a wrong move.

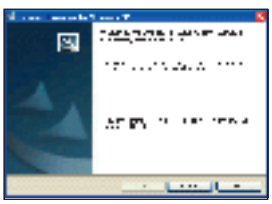
What's needed is a nice graphical user interface to give you access to the registry's most cunning tweaks, so you can apply them without having to get your hands dirty. You can get all of this in the shape of Windows XP PowerToy TweakUI. This is an unsupported extra offered by Microsoft for the benefit of PC enthusiasts and power users.

Once you've got TweakUI installed on your system, you'll be able to make a series of customisations and tweaks that will improve your security, enhance the performance of your PC, or just plain show off that your version of Windows XP is better than average. Applying each tweak or edit is no harder than ticking or clearing a box – but you needn't let anyone else know just how easy it is…



www.windowsxpmagazine.co.uk

For monthly advice, tutorials and features about all aspects of Windows XP (including the registry of course), you should take a look at our sister publication, Microsoft Windows XP: The Official Magazine. Check out the website here for more information.



1 Once you have downloaded it, Launch the file TweakUIPowertoySetup.exe. This extracts the installation files and prepares the Installation Wizard for the rest of the setup operation. Once complete, you'll be welcomed to the wizard. To continue, click Next.



2 You're now presented with the licence agreement. This contains the usual terms and conditions, but it's worth noting that Microsoft doesn't support PowerToys; they are provided as unsupported extras for free. Accept the agreement and click Next.



3 You now need to choose the type of installation you want. Opt for Complete, as this is by far the easiest option. Choose Next and Install. Watch as TweakUI is installed onto your PC. Click Finish to complete the installation.

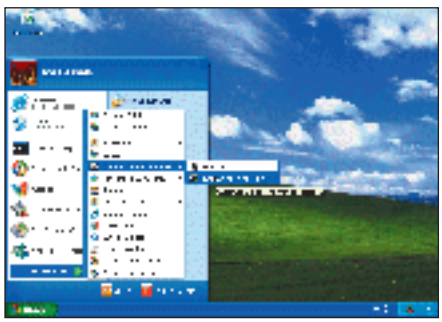
CFG10.chp_11 9/12/2003 3:15 PM Page 113

TweakUI interface

Learn how to find your way around this intriguing program

TweakUI is well worth installing, even if you've become proficient at editing the registry; you can apply a range of tweaks in the time it takes for you to perform just one manual registry edit. There's something calming and familiar about ticking or clearing boxes and pressing an Apply button; it makes registry edits feel like any other change in Windows XP.

Explore the tree view in the left-hand pane and examine the possible tweaks in each area on the right. Each tweak comes with its description in the lower-right hand pane. Pay close attention to this, as it explains how each edit works and the limitations it has.



Launch TweakUI from the PowerToys for Windows XP group on the Start Menu.



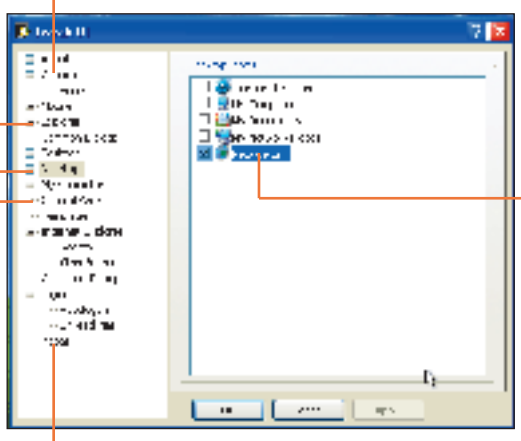
Even though you aren't directly editing the registry, TweakUI is capable of making quite major changes. It's just as important to back up the registry before using TweakUI as it is if you were contemplating a manual editing session.

How to read the TweakUI Map

Explorer. This offers a number of per user settings, such as enabling smooth scrolling or removing logoff from the Start Menu.

Desktop. Here you can choose which icons appear on the Desktop and you can select which one should appear first: My Computer or My Documents.

Control Panel. Add or remove individual Control Panel applets here and block those you don't want others to see.



General. Here you can enable or disable various animations and effects. You can display the version number on the desktop too.

Clear the boxes to remove icons from the desktop. Tick the boxes to enable each icon. Click Apply to confirm.

Repair. This option enables you to repair commonly corrupted areas such as icons, the font folder and Regedit.

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TweakUI Top Tweaks

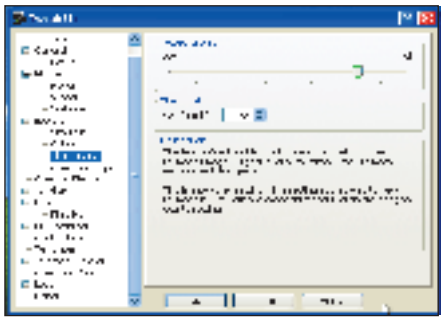
Popular and easy tweaks to perform with the Microsoft PowerToy



Remove balloon hints by selecting Taskbar and clearing the box next to Enable Balloon Tips. While you're there, select Grouping and choose whether you want applications grouped by those least used or those with most windows open.

TweakUI enables you to tighten up your Windows XP interface and customise your PC. This would normally involve editing the registry, but is now as simple as using a Control Panel applet.

If you want to stop users from browsing your hard drive, you can remove it from My Computer by clearing a box. Changing the sensitivity of your mouse is equally easy; you can select the speed of double-clicks and the amount of movement for a drag operation to kick in – you can even change the speed at which context menus appear. You can also change or remove shortcut overlays and alter the size and quality of thumbnails.



Use TweakUI to change the size and quality of thumbnail images in Explorer.



Change the options available to you when Windows XP plays a CD automatically. Expand My Computer and Autoplay in TweakUI. Select Handlers and edit or delete existing options – or create a new one.

- **Alter mouse** settings and test them as you go. Select Mouse in the left-hand pane and change the menu speed using the slider. Alter double-click and drag sensitivity and then use the test icon.
- **Remove the** shortcut arrow from your desktop shortcuts. In TweakUI, expand Explorer and select Shortcut. Choose None for the overlay. Click Apply. You can also choose light arrow, or specify your own overlay here.
- **Alter the** size and quality of the thumbnails used in Windows Explorer. Expand Explorer and choose Thumbnails. Use the slider to select the image quality. Alter the size of thumbnails in pixels below this. Click Apply to enable this setting for new thumbnails. Existing ones remain unchanged.
- **Block drives** from showing in My Computer. Expand My Computer in TweakUI and select Drives. Clear the boxes next to those drives that you don't want to appear. Click Apply.

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Tweaki Install

How to put Tweaki… from JerMar software onto your computer

Tweaki… for Power Users is a similar program to TweakUI, though you get more tweaks. However, while TweakUI is free from Microsoft, you have to pay to use Tweaki beyond its initial 14-day trial.

Tweaki supports Windows 98 and Me as well as Windows NT4, 2000 and, of course, Windows XP. The tweaks available differ according to the version of Windows you're running. There are numerous security tweaks, including many of those on offer in TweakUI. You can hide selected drives within My Computer and disable Control Panel applets. You can also disable many right-click context menus to stop alternative methods of reaching other functions you've hidden.

To stop users browsing the network, you can remove View Workgroup Computers and My Network Places from the Start Menu and Windows Explorer task panes. Alongside these there are plenty of interface tweaks and a way of harvesting device drivers so they are in one place, should you ever need to reinstall Windows.



You'll find a 14-day trail version of Tweaki… for Power Users on the accompanying CD. This provides you with enough time to play with all its features before you register. Registration costs $19.95 (about £12).



1 Launch the Tweaki4.exe file. This extracts the files necessary to install Tweaki. It also creates the install wizard. A splash screen is displayed while this happens. Once complete, click Next to start the installation properly.



2 Read the licensing agreement and note the terms of this 14-day evaluation version. Use the scroll bars or Page Down to view the whole licence agreement. Click Yes to accept these conditions.



3 To accept the default install location, click Next. Otherwise click browse and supply an alternative. Accept the default program folder and click Next. Click Next again to install the files and Finish to end.



The link points to a site where you can download Tweaki… for Power Users and where you'll also find other handy programs for Windows XP users.

www.jermar.com/tweaki.htm

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Tweaki Interface

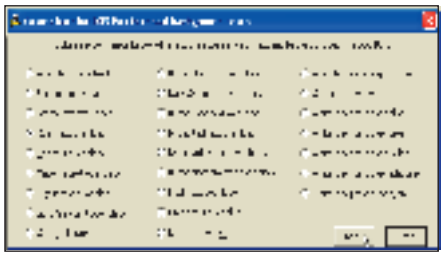
Find out what this mammoth tweaking application has to offer



You've probably been wondering how you can change the colour options for the DOS or command prompt window. To stop you losing sleep over this, here's how: in Tweaki, choose NT4/Windows 2000/XP, click DOS box text and background colour and select one of the many options.

Once you launch Tweaki and clear the registration nag screen, you'll realise that it's quite a complex control panel. Each section and each selection is well labelled but there are rather a lot of them. You can ignore the Windows 9x/Me section, because it doesn't apply to Windows XP, but the other buttons at the top of the window take you to different screens and dialogues, each of which handles a different area of customisation.

The Win Tweaks section carries a mixed bag of customisations and security fixes. The Paranoia tab shows a log of recent activities and websites visited, along with Outlook Express Identities, so you can check up on other users of your PC.



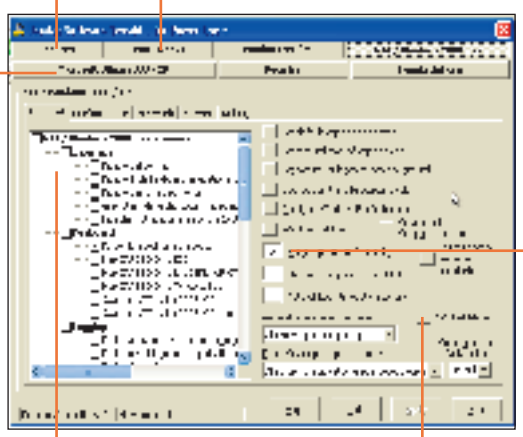
There's an immense choice of colours for the Command Prompt box.

How to read the Tweaki Map

Security. Press this button to find a wide range of security options, including hiding drives and disabling Control Panel applets.

Microsoft Office. If you have Office 2000 or Windows XP installed, you can configure each application in this screen.

Windows XP Interface. Here are the usual suspects, including Disable Balloon Tips and altering the keyboard configuration.



Win Tweaks. This provides general tweaks, including customising right-click menus and many Internet Explorer tweaks.

Set the time for hung applications before reporting them as unresponsive here. Also set the low disk space threshold.

Click Here to customise the Start Menu. Decide which applications you want to appear in the Most Frequently Used list.

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Tweaki Top Tweaks

Learn how to achieve some of the most popular tweaking tasks with Tweaki

To disable drives using Tweaki, choose Security at the top of the window. Select Interface and clear the check-boxes next to the drive letters you want to disable – any drives with red crosses below them are not physically connected.

To stop other users having easy access to utilities like Regedit and MSConfig, press 'Clear Run history now'. Other defence tactics include scrolling down in the same section to Start Menu and checking these options: 'Disable Start Menu Right Click'; 'Remove Run command'; 'Remove Search command'; 'Remove Network Places from Start Menu'.

Change to the Win Tweaks screen. On Interface, check 'Show Windows version on desktop' or 'Remove shortcut arrows' for a couple of popular changes. Also consider checking 'Display Scrolling menus vs. columns' to stop your Start Menu getting fat. The following can be blocked from the Start Menu and Desktop on the same page, with the appropriate boxes: My Computer, My Documents, My Music and the current username.



To create a collection of all your drivers, select the Win Tweaks button and the Drivers tab. Click 'Identify all drivers'. Now click 'Back up drivers in this folder' and browse to the destination folder of your choice. Click OK, followed by 'Backup drivers' to create a copy of all current drivers in one location.

Tweaki Options

How to configure this configuring program

Launch Tweaki and press Tweaki Options to view the configurations you can change. Press 'Check for update' to connect to the JerMar Software servers. If there's a new update, the files will download (you'll need to restart the program to install them). Check Password-protect Tweaki so no one else can get access to it. Enter your chosen password and do so again to confirm it. Click Apply to make the password active. Remote Connections enables you to connect to other PCs on your network, as long as they support remote registry editing. It's much easier than the equivalent function in Regedit.



Tweaki options will enable you to update, password-protect and enable remote editing.

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Tweak-XP

Introducing the ultimate tweaking program for Windows XP

www.totalidea.com/tweakxpdown.html

We've included a trial version of Tweak-XP Pro 3 on the cover disc for your convenience. To register beyond the trial period, just follow one of the nag screens. The full version costs $34.95 (about £24.50).

Tweak-XP Pro 3 is probably the Rolls Royce of tweaking programs. It can modify most areas of the registry and it throws in skinning, internet tweaks and a large number of utilities to boot. It costs somewhat more than other similar programs, but you get extra features and a cool interface for your money.

While TotalIdea, the company behind Tweak-XP, won't accept responsibility for any problems created by the program, they do build in some sensible precautions. When you first run the program, it creates a full registry backup and sets a restore point, so you should be able to get back to where you started in all but the most extreme cases.



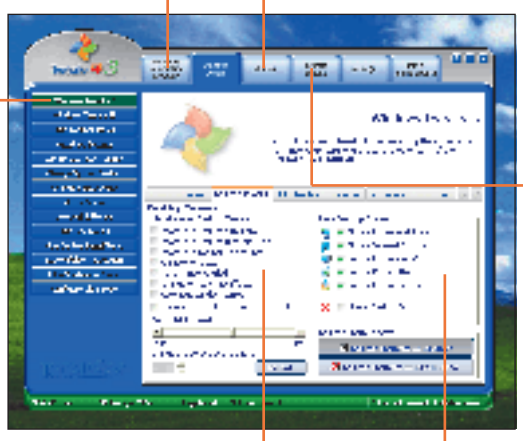
When you first run Tweak-XP Pro 3, it backs up the registry and sets a restore point.

How to read the Tweak-XP Map

Hardware information and tweaks. Click here to directly tweak your hardware and see essential monitoring information.

These buttons located on the left-hand side take you to different categories of tweaks and edits. This one is a series of Windows tweaks.

Find Familiar desktop tweaks here, such as cursor blink speed and removing flashy Windows 3D effects.



Utilities. Press here to gain access to a huge number of system utilities, including those bundled with Windows, and a powerful registry cleaner.

Internet Tweaks include cookie management and access to Internet Explorer's Cache and History.

Tighten security by removing these popular items from the desktop: My Computer, Recycle Bin, Internet Explorer and more.

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Tweak-XP Tweaks

Some common and easy tweaks you can achieve with Tweak-XP

Tweak XP provides all the now-familiar registry tweaks, as well as several other areas of customisation. The Utilities button takes you to additional features; you can access all the main Windows Management consoles or you can select Wallpaper Changer to get a wallpaper image automatically changed at regular intervals.

Virtual Desktops enables you to make up to 255 different custom desktops, each with different settings and shortcuts. You can create desktops for gaming, office work or homework, to name but three examples. You can also censor applications, to stop some or all users executing those on the list.

The registry cleaner will remove unnecessary entries. The Clean Unnecessary Files utility will free up disk space. For a more traditional tweak, select Windows Tweaks > Windows Tweaks 2. Here you can disable compressed folders, remove Run commands and suppress the Desktop Cleaning Wizard. If anything, the problem with Tweak-XP is that there's just too much choice.



Turn a folder on your hard drive into a virtual drive, using Tweak XP. Choose Windows Tweaks > Virtual Drives and select a drive letter. Now browse to the folder you want to use as a drive, check 'Always create this drive when Windows launches' and click Create Drive.

Start Menu Control

Disable items on the Start Menu for all users or the current user

Select Windows Tweaks from the top tabs and then choose Hide Start Menu Items from the buttons on the left-hand side. You can now browse through all the Start Menu folders for the current user, or for all users. The folder list appears on the left-hand side, with the shortcuts in the current folder on the right-hand side. Check the box next to any folder to hide it. You don't have the luxury of being able to edit the Start Menus of other user accounts, apart from the current one and that for all users.



Hide Start Menu items to keep those fiddling fingers under control.

CFG10.gloss 10/12/2003 2:13 PM Page 126

Glossary

Your handy guide to important terms you'll see used by your computer and throughout this Focus Guide

Boot – *The process of starting and resetting your PC, all the way from pressing the power switch to when Microsoft Windows XP has finished loading.*

Broadband – *A high-speed internet connection (like ADSL), where files download faster than with a standard modem; ideal for watching movie clips or listening to music over the internet.*

Browser – *A program, such as Internet Explorer, which is used to read web pages and download files from the internet.*

Codec – *A small set of codes or instructions that adds functionality to a program, or that enables certain files to be accessed.*

Cursor – *The on-screen arrow that is always visible in Windows XP and that is controlled by moving the mouse around. Use it to make selections and to tell your computer what you want it to do.*

CD-ROM – *Data CDs for use only in a computer; they usually contain an application or other files.*

CD-R – *A blank CD onto which you can record data or audio with a CD-RW drive. A CD-RW is a CD-R that can be rewritten multiple times.*

Desktop – *The main screen in Windows XP: the colourful background that appears every time your PC finishes loading up. You access main icons such as My Computer and Recycle Bin from here.*

Double-click – *To position the cursor over an object and press twice on the left mouse button in quick succession: the standard method of launching an application or file.*

Drag – *To move an item on the screen by selecting it, then pressing and holding down the left mouse button while moving the mouse. You can do this with icons and windows, amongst other items.*

Drive – *Anything in your computer that can store data on it; this includes hard disk drives, CD drives and floppy disc drives.*

DVD – *Digital Versatile Disc: this looks like a CD, but it can store much more data. It is most commonly used for high-quality movies and requires a DVD drive to be read.*

Email – *A typed message sent electronically across the internet from one person's computer to another.*

File – *A generic name for a stand-alone data object in Windows XP. This can be a document, an image, a song, or almost anything that is self-contained. You'll need a specific program to read what's in certain types of file.*

Folder – *A container for programs and files in graphical user interfaces, shown by a graphical image of a document folder in Windows XP. It can hold files and/or additional folders.*

Gigabyte – *Standard unit of data for computers. One gigabyte (GB) contains 1,024 megabytes (MBs). The average PC has 40GBs of storage space.*

Hardware – *The physical components of a computer system, including any peripheral equipment such as printers, modems, and mouse devices.*

Icon – *A small graphical image that is displayed on the screen to represent an object that can be manipulated by the user. Most commonly used to launch files and programs.*

Install – *To add a program or application to your computer, to be stored on the hard disk. It will stay there permanently until you choose to uninstall it.*

Internet – *A worldwide network of computers and information. You can read web pages and download files from the internet with your Windows XP computer.*

Maximise – *To enlarge a window to its biggest size (usually so it fills the entire screen) by pressing the maximise button on the top right of a window.*

Minimise – *To reduce a window to its smallest size, so it is shrunk to a labelled button on the taskbar. Press the minimise button on the top right of a window to do this.*

My Computer – *An icon on the desktop that enables you to see and alter everything stored on all your computer's drives.*

My Documents – *Another icon that links to all your word processing, spreadsheet and image files. Store music and work-in-progress files here.*

Network – *A private group of computers and associated devices, such as printers. Only computers on the network can interact with the network, unlike being on the internet.*

Program – *A complete, self-contained set of computer instructions that you use to perform a specific task, such as word processing, music playback, or data management.*

Recycle Bin – *The place (accessed by an icon on the desktop) where Windows XP stores deleted files. You can retrieve files deleted by mistake, or you can empty the Recycle Bin to create more disk space.*

Right-click – *To position the cursor over an object and press the right-hand mouse button once – usually offers a selection of alternative actions for an object in Windows XP.*

Start button – *The big button which is almost always visible on the bottom left of your screen. Use this to access your programs from the Start menu.*

Taskbar – *This wide, short bar contains the Start button and appears by default at the bottom of the desktop. Click the taskbar buttons to switch between programs currently being used.*

Window – *A portion of the screen where programs and processes can be run. You can have several windows open.*

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www.windowsxpmagazine.co.uk

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http://support.microsoft.com

For serious technical problems, there's a substantial and very useful support resource at the address to the left. Type the keywords of your problem into the Search box on the top left of the screen – for example, 'tweaking registry', and click the green arrow button to search the Help archive.

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